SUPPORTING ENGLISH LANGUAGE TEACHERS DOING FURTHER DEGREES AT A DISTANCE: A WEB BASED STRATEGY RESEARCHED.

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Doctor of Philosophy

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May, 2006

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THESIS SUMMARY

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This thesis explores how the world-wide-web can be used to support English language teachers doing further studies at a distance. The future of education worldwide is moving towards a requirement that we, as teacher educators, use the latest web technology not as a gambit, but as a viable tool to improve learning. By examining the literature on knowledge, teacher education and web training, a model of teacher knowledge development, along with statements of advice for web developers based upon the model are developed.

Next, the applicability and viability of both the model and statements of advice are examined by developing a teacher support site (http://www.philseflsupport.com) according to these principles. The data collected from one focus group of users from sixteen different countries, all studying on the same distance Masters programme, is then analysed in depth.

The outcomes from the research are threefold:

- *A functioning website that is averaging around 15,000 hits a month provides a professional contribution.*
- *An expanded model of teacher knowledge development that is based upon five theoretical principles that reflect the ever-expanding cyclical nature of teacher learning provides an academic contribution.*
- *A series of six statements of advice for developers of teacher support sites. These statements are grounded in the theoretical principles behind the model of teacher knowledge development and incorporate nine keys to effective web facilitation. Taken together, they provide a forward-looking contribution to the praxis of web-supported teacher education, and thus to the potential dissemination of the research presented here.*

The research has succeeded in reducing the proliferation of terminology in teacher knowledge into a succinct model of teacher knowledge development. The model may now be used to further our understanding of how teachers learn and develop as other research builds upon the individual study here.

Key words:
knowledge – development – teacher education – web-supported learning

DEDICATION & ACKNOWLEDGEMENTS

This doctoral thesis is dedicated to my wife, Enma.
Without her support and encouragement over the last five years, this work would never have been completed.

I must also acknowledge the support of my tutor, Julian Edge, and the contribution of the 36 Group One users without whom this research could not have been undertaken. They know who they are and hopefully realise the depth of my gratitude for their active participation.

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Chapter 1 – The Introduction:
Using the Web to Support Teachers Doing Further Studies at a Distance

1.1 Statement of topic and aim of research

This research sets out to investigate the use of a website to support English language teachers doing further degrees at a distance. The hypothesis being tested is that the successful development of this website, as evaluated by a mixture of quantitative and qualitative methods detailed in Chapter 3, will enable the emergence of a dual contribution to the field of teacher education.

First, a statement of emergent pedagogic theory is articulated based on the understanding that has arisen, reflexively shaping and being shaped by this research. This statement of theory, represented diagrammatically and expressed by a series of five principles, may be evaluated for both its practical applicability and its contribution to the cross-disciplinary literature that informs this study as a whole.

Second, statements of practical advice for the development of other such websites are laid out. These statements are linked to the principles and can be further tried, tested and evaluated as they have been during this research. Chapter 8 suggests avenues of further research that can build upon this initial study.

1.2 The motivation and relevance

The original idea behind this research sprang from my involvement with teachers around the Emirates who had been studying Masters degrees at a distance or who had taken the UCLES RSA Diploma in English Language Teaching to Adults (DELTA)

which I had been tutoring on for seven years. I had observed that both groups of teachers clearly went beyond the provided course input notes when doing their assignments and the questions that they were asking me frequently mirrored one another.

However, it was also evident that the teachers were unclear about how to proceed beyond the confines of the course materials, so it was at this point I began to consider how their sought knowledge could be made available in one place. At the same time, a number of teachers whom I had been supporting in their further studies moved away from the Emirates but asked me to continue supporting them via email. The idea of using a website to provide the input, links and knowledge requested was born, so that I did not need to continually repeat myself in the email responses to similar questions.

I aimed to combine the website with research into how teachers developed their professional knowledge, especially when they were embarking on further studies. I wanted this research to be grounded in a practical application of the knowledge theory I was aiming to investigate. I agree strongly with Stenhouse (1975:165) that a "... research tradition which is accessible to teachers and which feeds teaching must be created if education is to be significantly improved". I believe that teacher education must aim to help teachers develop as reflective, knowledge-seeking professionals (Wallace 1991, Richards & Lockhart 1994), and that this is best achieved by creating an open network of colleagues who support classroom research in context. This network can then allow teachers to explore why they do what they do. I wanted to investigate how I could facilitate this process at a distance as ex-colleagues dispersed around the world. This was the motivation for my research. I now had to ensure that

the research I conducted would be relevant to the field of English language teacher education in which I work.

In writing the above two paragraphs I have drawn heavily from correspondence with my tutor and his Head of Unit in the late nineties as I was attempting to put together my thoughts for the doctoral proposal that became this research. Reading through this correspondence and the two paragraphs above, three main themes feature prominently. These are the current state of web training and education sites, teacher knowledge and its development and, finally, teacher education and its effect or lack of it on the development of teachers. I became fascinated with the interrelationships between these three fields and in my preliminary readings realised that there was in fact very little communication or cross-referencing between them.

At that time I was reading three books, one from each of the above fields. I was captivated by Maturana & Varela's *Tree of Knowledge* (1992) and its narrative layman style of describing their latest research in biological and neurological studies and how these were adding scientific weight to social constructivist theories of knowledge creation. I had just bought and was working my way through the fascinating case studies in Freeman's latest book on *Doing Teacher Research* (1998) and gaining real inspiration to begin my own research from the descriptions therein. The third book by my bedside at the time was a book on web design, *Teaching Online* by Draves (2000). I was struck by the similarity between each of the books but there was not one common reference in the three books. Each of the authors had drawn mainly from their own field or from related fields arriving at similar positions without once acknowledging the work from the other areas. I decided I wanted to draw upon

all three areas in a cross-disciplinary literature review which would focus on the similarities in the different fields. I thought that these similarities could potentially produce a fresh theoretical perspective to enhance our understanding of how teacher knowledge develops. I further wondered how such a new theoretical perspective could be applied to the support of teacher education via a web-based medium.

That final sentence in the last paragraph yielded the contribution I was looking to make in my field of English Language Teacher Education, a contribution expressed in the opening section of this chapter. I then posited that should I be able to draw the similarities in the three literatures together into a tentatively expressed theory of teacher knowledge, I could then practically test its applicability by launching the site I wanted to develop to support my ex-colleagues. This would result in the theory being substantiated or proving unmanageable, either of which I argued would contribute to our understanding of the use of the web as a medium in English language teacher education.

This section has looked back to my initial thoughts as to the motivation and relevance of the research. Now that the study is complete my motivation remains as driven as ever, and I have attempted to articulate this drive in my description of the avenues of further research in Chapter 8. I would now claim that the research is not only relevant to the field of English language teacher education but that the model of teacher knowledge development proposed here could potentially be applied in a wider context. The same is true of the statements of practical advice for developers of teacher support sites. I would suggest that these too have a far wider applicability and

relevance than the narrow field in which we work and towards which the research is directed.

I should also add that recent publications on knowledge and its role in entrepreneurship and business (Formica 2004, Rovatti 2005) demonstrate the current relevance of this research. These publications point to the three strands of literature explored here as being essential in the new knowledge era of the globalised and borderless economy of the twenty-first century. They view knowledge and technology as the main features of this era, but education as the key to progress and growth.

1.3 The setting and data

This introduction briefly describes the setting of the research and the data collection strategy without impinging on the details of Chapter 3.

The setting for this research is not what we would ordinarily understand as the setting for research. It is the website which I developed, http://www.philseflsupport.com (See Figure 1-1 on the next page).

The website is the vehicle for the research, feeding into the local contexts of the users who registered on the website and, more specifically, the selected focus group of users. This focus group came to be identified as those studying for the Aston University Masters in TESOL / TESP. I would suggest that this combination of a website with a specific focus and a restricted group of users with a common purpose, whose input determined the development of the website, provides the parameters and "boundedness" (Holliday 2002:38) required for such extensive research.

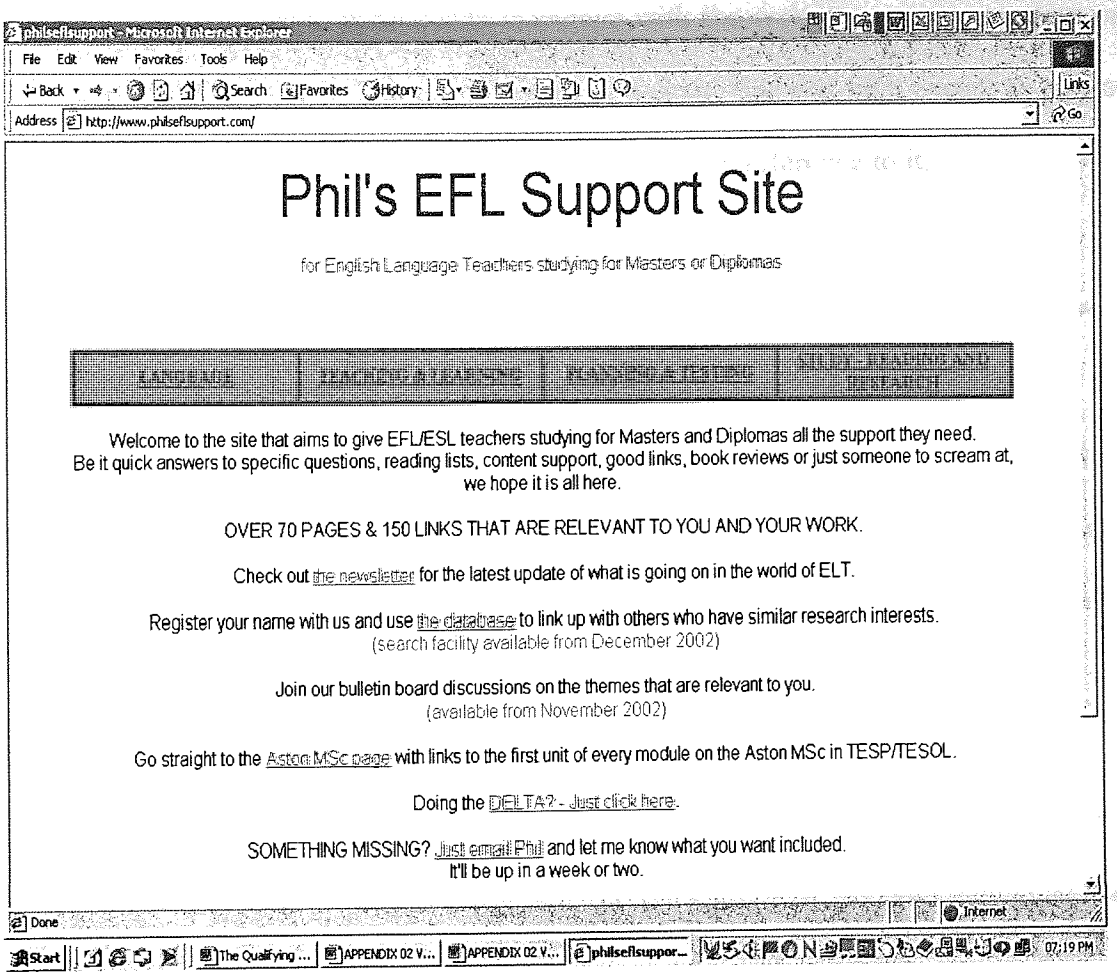


Figure 1-1: Photo-shot of the website

The selection of these users as the focus group was due to the fact that they were the most cohesive unit of initial respondents who had provided detailed and consistent feedback. They were also attractive in the sense that their commitment to their programme of study suggested that the drop-out rate would be low. At the same time, it should be noted that although the further development of the website was based upon their input there was no official connection between the website and Aston University. In support of this independent research, information about philseflsupport.com was printed in the monthly MSc newsletter and I was allowed to post the first unit of each module on the site. However, the website was neither approved nor recognised by the university in any formal capacity. There was no

pressure on Aston MSc participants to engage with the website, nor any sanction on those who did not use it. Indeed, no record of website use was kept except as part of my research, and no Aston teaching materials made any reference to it.

The data collection strategy is described in detail in Chapter 3 and, as can be seen there, focused on providing as wide a variety of data as possible. The website as the vehicle for the research provided the main source of data, being the exchanges of emails with the users and the discussion board correspondence between users. Another key source of data was my research journal which tracked the study from its outset on August 14th, 2001 to the last entry so far in November, 2005. Other sources included user questionnaires and, in line with Silverman (2000), the judicious use of quantitative data on the number of hits on the website and individual pages, the location of users, the growth of the groups and the volume of total and individual user email responses.

The mass of data generated by this research was collated and analysed by using standard functions in MS Word with individual user emails copied into yearly files and then colour coded against the emerging categories during the analysis. The email data was analysed using an approach that segmented emails into their main communicative functions, which became the categories. This segmentation and categorisation was supported by the use of theory memos that tracked my thought processes and decision making during the twenty-eight months of analysis. These theory memos became another major data source.

1.4 The structure of the study

The thesis is divided into eight chapters with the bulk of the study being given over to the analysis (Chapter 5) and the core being the interpretation (Chapter 6) with its substantiation and extension of the model of teacher knowledge development.

The literature review (Chapter 2) looks at three related, but as yet largely unconnected literatures from the fields of knowledge, teacher education and web training to support a theory of teacher knowledge development. It traces a common thread in thinking about knowledge and learning across the three disciplines, which moves from behaviourism to cognitivism, constructivism and onto social constructivism. It first reviews knowledge in general before showing a similar development in terms of teacher education and development, with particular reference to English language teaching. Drawing on these two reviews, I then propose a contemporary model of teacher knowledge development with knowledge of self at its heart, and the informal practical knowledge of teacher experience linked to formal theoretical knowledge by a continuous cycle of theorising practice and practical classroom experimentation. I finally review the developments in web-based teaching and learning to demonstrate that a similar trajectory can be seen there.

The methodology (Chapter 3) describes the philosophies, theories and methods behind this research. The chapter first describes my overriding qualitative philosophy and belief in the power of the case study before discussing the paradox of the interventionist nature of my developer role within a descriptive study. The chapter then goes on to describe the methodological detail. This details the choice of focus group, the importance of language and the need to segment and categorise. The

chapter continues with a review of fifteen methods of discourse analysis before the development of the coding questions that were used in the segmentation and categorisation of the data is described. Chapter 3 continues with a brief demonstration of the model of language analysis employed in the study, a description of how feedback was gathered from the users and a list of the different data types utilised in the research. Finally, the chapter concludes by examining how the research was evaluated.

The case study (Chapter 4) details the development of the website. It was originally written as a narrative, but this resulted in the loss of important thematic connections, so the sections now deal with those major themes. The first section looks at the most important technical hardware and software issues that arose before the next section tracks the development of the site itself and how it grew in response to the feedback and input of the users, referring to the quantitative data in the process. The third section discusses the use of email as a viable communication and research tool outlining my experience during the research in some depth. I then move on to a review of the use of the discussion board and the reasons why it was not as successful as I had anticipated. The penultimate section describes how the user groups were finalised and demonstrates their growth over the two years. Finally, I reflect on how these five themes impacted on the research and how the website as a vehicle for the research could inform the principles proposed in Chapter 2.

Chapter 5 details the analysis of data collected from January 2002 to December 2003 and outlines the main categories that emerged. It describes in detail the four major and

four minor categories that emerged, defining each category and the turns involved in the exchanges.

The interpretation (Chapter 6) ties together the literature review with its model of teacher knowledge and six principles for web developers, the case study narrative and the analysis of data. The first section reviews how the case study and the analysis match and extend the model of teacher knowledge, demonstrating the cyclical nature of teacher development. The second section proposes a set of nine keys to effective web facilitation based upon the data analysed and, finally, a revised set of principles are proposed and discussed in Section 3.

Chapter 7 evaluates the validity of the research and the claims made at the end of the previous chapter. In order to justify the value of this research to, primarily, the field of TESOL I answer the questions "Why should we believe you?" "What can I learn from this?" and "So what?" from Edge & Richards (1998). The chapter is divided into four sections (confirmability, dependability, transferability and credibility) based upon the naturalistic criteria of Lincoln & Guba (1985). This division allowed me to use a variety of methods to ensure the evaluation was fully comprehensive. The confirmability, or objectivity, of the study is evaluated by comparing the research to data from the worldwide group of users. The methods also include Holliday's (2002) thick description criteria, which examine the depth and substantiality of the research, and Silverman's five interrelated methods (2000:12) for the evaluation of the validity and reliability of qualitative research.

Chapter 8 concludes the thesis by first reiterating the claims made and then looking at the limitations of the study before Section 3 explores avenues for further research.

1.5 The expected outcomes

This introduction began by outlining the aims of the research that translate into three expected outcomes. First, a successfully developed website, second a model of teacher knowledge development supported by soundly drawn and practically applied principles that have been tested through the research, and third a series of statements of practical advice for developers of other teacher support sites.

I would claim that all three of these expected outcomes have been successfully met, but I encourage readers to draw their own conclusions in the hope that the final chapter suggests enough avenues of future research to warrant the further investigation of the theoretical model and its supporting principles.

Chapter 2 – The Literature Review: Knowledge and Learning, Teachers and the Web

In this review, I posit a theory of teacher knowledge development, and support it by bringing together three literatures from the fields of knowledge, teacher education and web training in a way which highlights the similarities in their development. Whilst these similarities are not surprising in their own right, they have perhaps not been given the attention they deserve to date.

Much of this chapter works necessarily at a level of epistemological discussion, which is, talking about knowledge and learning. The main aim of the research, however, is to drive forward ways of understanding the development of teacher knowledge and how this can be practically applied, thereby enhancing procedural knowledge in its own right. The chapter, therefore, offers a blend of literature review and the formulation of working principles, and, in so doing, seeks to maintain an appropriate balance between conceptual debate and preparation for action.

In this chapter, I review a trajectory of development in thinking about knowledge and learning that moves from behaviourism to cognitivism and constructivism and on to social constructivism. I begin in general terms (Section 1) and then go on to show how this trajectory has been realised in terms of teacher education, with particular reference to English language teaching (Section 2). Drawing on this review, I propose a contemporary model of teacher knowledge development that encompasses the multiple terminologies used in the literature (Section 3). In Section 4, I review developments in web-based teaching and learning in order to show how the trajectory outlined above can also be seen here, if sometimes in incomplete form, as the initial

boom in web training saw a regression to behaviourist models before later technologies allowed a more progressive approach.

All three literatures have followed similar paths of development, and support the theoretical model of teacher knowledge development posited in the core section (3). Finally, Section 5 demonstrates a potential gap in current web-based support for teachers in further education before formulating a set of underlying principles and practical statements of advice. These principles and practical statements are used in the rest of the thesis to inform the case study on which I report, and are themselves evaluated in this research.

2.1 Knowledge and Learning: A Brief Overview

This section weaves a path through the extensive literature on knowledge and learning beginning with behaviourism as the dominant position for much of the twentieth century and then moving on to cognitivism, constructivism and social constructivism.

Mayer (1996) summarizes the first three of these views of learning as follows: Behaviorism is learning as a response strengthening; cognitivism is learning as knowledge acquisition; and constructivism is learning as knowledge construction. Social constructivism is learning as knowledge construction through a collective, communicative process in a social world as opposed to a personal process (Kuhn 1970).

Wink & Putney's (2002) comparison of official and classic theories of learning in the figure below (with the section headings of this chapter in blue) is helpful in clarifying the myriad paths of research into knowledge and how we learn.

Date	Official Theory of Learning	Classic Theory of Learning
1900	Scientific Management Taylor Memorisation	Progressivism Dewey Experiential
		Vygotsky Dialectical learning
WW1		Reciprocal action between thought and language
WW2		Frankfurt School of Critical Theory Piaget Sociocultural Learning
1950	**Behaviorism** Black box theory Stimulus-response, Quantify-measure	
1980		**Cognitivism** – mental processing Interactionist **Constructivism** Constructionism
1990	Back to Basics Controlled language	**Social Constructivism** Critical Pedagogy
2000		Democratic Pedagogy

Table 2-1: Comparison of official and classic theories of learning

Wink & Putney (2002:33) expand on Mayer's brief definitions above as follows:

- The behaviorist-derived perspective views knowledge as a fixed body and learning as the acquisition of facts, skills and concepts.
- The cognitive-constructivist approach of Piaget views knowledge as a changing body, individually constructed in the social world, and learning as the active restructuring of prior knowledge.
- The social constructivist approach of Vygotsky views knowledge as a changing body, mutually constructed with others and learning as the collaborative construction of socially and culturally defined knowledge and values.

2.1.1. Behaviourism

Behaviourism was the dominant tradition in education in the early and middle twentieth century and was recorded as early as 1825 (Murray in Reynolds 1989) with the view upheld vigorously, especially in the United States. The foundation of behaviourist beliefs was that knowledge could be transmitted from a knower to a non-knower or received directly from the external world, with knowledge as independently structured in its own right and in ways that could be learned by individuals.

Behaviorism used animal learning to validate its principles and concentrated upon the study of observable and measurable behavior (Good & Brophy 1990). It is, therefore, deeply rooted in Positivism, with Watson (1913) arguing that overt behavior should be studied and recorded in social sciences without a focus on inner states such as motives. Skinner (1953:35) explains that, "the objection to inner states is not that they exist, but that they are not relevant in a functional analysis". Therefore, behaviourism believes knowledge resides outside of the individual and learning is a habit forming process.

Watson (1913) defined this habit forming learning process as a series of stimulus and response actions in an observable cause and effect relationship, a view based on Pavlov's experiments with dogs (1927) and E. L. Thorndike's early work in animal learning (1911). This view received new prominence on the publication of Skinner's 'Verbal Behaviour' (1957). The methodological and pedagogical approaches behind this theory depend upon the notion that all knowledge is made up of concrete 'objects' which can be passed on to a learner. Behaviourists do not see the learner as an active

participant in the creation of individual knowledge, but the recipient of knowledge that exists outside of the individual and that needs to be consumed by them.

Skinner emphasized the importance of reward and punishment in operant conditioning, believing that behavior is accordingly strengthened and weakened. Belkin & Gray (1977:59) explain, "The learning principle behind operant conditioning is that new learning occurs as a result of positive reinforcement, and old patterns are abandoned as a result of negative reinforcement". The influence of Behaviorism is not only seen today in many institutions' grading systems that reflect this reward-punishment philosophy, but also, claims Shepard (2000:9) in several other "conceptualizations of teaching and testing". These include that "learning is sequential and hierarchical" and occurs by "accumulating atomized bits of knowledge" with knowledge transfer "limited to situations with a high degree of similarity", and that tests are "the direct instantiation of learning goals" and "used frequently to ensure mastery before proceeding to the next objective". This final conceptualization refers to the Behaviourists' reductionist and uniform view of curriculum, which had to contain tightly specified instructional objectives in order for control to be maintained over each step of the learning process.

Shephard's claim above is supported by other writers. According to Biggs & Watkins (1993), the first and most common conception of learning and teaching is a quantitative one in which learning is a matter of how much is learned, and a curriculum is seen as a collection of essential facts and skills, to be taught, assimilated and tested on cue. Teaching is the transmission of knowledge, which Fraser and Tobin

(1988) refer to as based on an 'absorption' model of learning. Good teachers here need only to know their subjects and to communicate the subject knowledge fluently.

Despite this undeniable influence on current educational practice, Behaviorism has been criticized by many educationalists and philosophers, and the influence of other learning theories is being felt in all fields of teaching and learning.

2.1.2. Cognitivism

Chomsky's seminal attack (1959) on Skinner's 'Verbal Behaviour' and the entire behaviourist theory began the pendulum swing towards cognitivism. He argued that limiting language learning to behaviorist models could not provide us with a convincing explanation for language acquisition, particularly the rapid language acquisition of young children. Chomsky emphasized that the principles of grammar must be innate and governed by internally represented rules. His criticism of Behaviorism is not limited to language acquisition but refers to all types of learning, which require pre-existing or innate representational structures (Brewer 1974).

His attack saw a paradigm shift in much linguistic research towards a greater cognitivist focus. This was particularly remarkable since until that point the behaviourist approach in the field of language and linguistics had been seen as far more deeply entrenched and theoretically sound than in, for example, cognition studies or psychology. Chomsky continued to attack behaviourist theories as they related to language and learning for at least another decade and he remained convinced that linguistic study would prove to be crucial in cognitive psychology and science (1968).

Cognitivism developed during the 1950s, 1960s and 1970s though the theory goes back to the ancient Greek philosophers, Plato and Aristotle, and the rationalist philosophy of Descartes. Cognitivists study the nature and learning of knowledge systems and, in contrast to the behaviourists, focus on the internal mental processes that the individual applies in learning. They deny that human beings are programmed animals who respond to environmental stimuli in the same way. In their view, human behavior is a result of thinking and human knowledge is structured and organized with learning taking place when the learner places new information in long term memory. Though cognitivists do not deny the importance of many elements of Behaviorism, "they view learning as involving the acquisition or reorganization of the cognitive structures through which humans process and store information" (Good & Brophy 1990:187).

The main pioneer of this theory is Piaget whose entire work can be construed as a view of the individual as a developmental meaning-making system (Overton & Palermo 1994). Piaget focused mainly on the child's evolving knowledge, but his work and his approaches were interdisciplinary, which is one reason why he has had such an effect on a whole generation of scholars from a diverse assortment of professional fields. Piaget saw himself as a genetic epistemologist (Wadsworth 1989:1), and his main interest lay in the developmental construction of universal forms of what he called 'necessary' knowledge. He identified (Piaget 1950) four stages of cognitive development in children with each new stage becoming the theory of the prior stage:

1 – the sensori-motor stage – the child uses sensory and motor capabilities.

2 – the pre-operational stage – the child uses symbols and responds to objects.

3 – the concrete operational stage – the child thinks logically and develops the ability to solve concrete problems.

4 – the formal operational stage – the child thinks about thinking and develops the ability to solve abstract problems.

In other words, the individual constructs, adapts and organises knowledge at each new stage based upon the already acquired knowledge from the previous stage. What Piaget sees as most important is how one knows rather than what one knows (Kegan 1982). Piaget sees meaning as a relationship between knower and known. In one of his seminal works (1950:103-4) he refers to E.L. Thorndike's stimulus-response work with animals but draws very different conclusions, whilst praising the methodology, by showing the influence of choice and existing knowledge on the learning that takes place.

One of the key words fundamental to Cognitivism is Schema, which Piaget views as having a history with an "interaction between past experience and the present act of intelligence" (Piaget 1950: 73). Schema is an organized system of thought that allows us to mentally represent the objects and events of the world around us. Cognitivists, therefore, contend that knowledge is constructed as internal representations (also called frames, schemata or scripts depending on the researcher's field) developed through understanding and exposure to new concepts (Greene 1986, Halpern 1996). This research (Atkinson & Shiffrin 1968, Schank & Abelson 1977, Best 1986) helps us understand how memory and cognition are organised. It envisages the individual as scaffolding knowledge through associable schemata which are linked together to form a personal knowledge structure. This structuring of knowledge is developed in

emerging patterns that are dependent on the individual's previous knowledge, with new knowledge assimilated seamlessly as it is mapped onto the existing knowledge structure. Cognitivists explain that new information is mapped onto old knowledge and the whole is reshaped as we adjust our schemata when the new knowledge differs from the existing knowledge structure. Woolfolk (1998:247) has drawn attention to the shift in cognitivist views, noticeable in the last sentence, from the acquisition of knowledge to its construction.

2.1.3. Constructivism

Constructivism emerged during the 1980s and 1990s although the theory can be traced back to Vico and Socrates, the great Greek philosopher, who liked to work with his students using the approach of leading them through a series of structured questions to promote critical thinking. The main philosophers and psychologists behind the development of this theory are Dewey, Piaget and von Glaserfeld, who all emphasize the active construction of knowledge and the importance of experience. Whereas cognitivists mainly focus on knowledge acquisition and the individual's processing of knowledge internally, the constructivists view learning as the construction of knowledge, which is formed in interaction between the individual and environment, thereby resolving the previous pendulum swing from behaviourism to cognitivism.

Constructivists see knowledge as constructed by the learner in the working memory through a process of selecting, organizing and integrating, referred to as the SOI model (Mayer 1996), as opposed to being encoded in the long term memory as cognitivists claim. Constructivists do not see learning as the accumulation of facts but

as the active individual constructions of personal knowledge that are dependent on how we embrace them as individuals and as a social group (Rosen 1996). Constructivists recognise that the individual is part of a social environment that influences the individual's knowledge construction, and they acknowledge the fact that, "... the human being is immersed right from birth in a social environment which ... changes the very structure of the individual" (Piaget 1950:171).

Piaget's work has been as influential for constructivists as it is for cognitivists, largely thanks to the work of Bruner in education who challenged the cognitivist camp directly writing, "... education is not simply a technical business of well-managed information processing... it is a complex pursuit of fitting a culture to the needs of its members, and its members and their ways of knowing to the needs of culture" (1990: 43). Piaget emphasized that the core of an individual's knowledge construct is decided by each person's own experience and culture, so the structures we construct develop differently based upon that individual's social environment (Rosen 1996). According to this approach, human knowledge is actively developed by accumulative stages building upon each other (Kegan 1982), with each stage dependent on the individual's social experience to date.

Säljö (1979) and Marton et al. (1993) describe learning as the active, personal construction of meaning, which Brownlee et al. (2003:110) view as qualitative in nature because understanding emerges from a transformation of the information in relation to the learners' prior knowledge rather than from a focus on aggregating quantities of information that remain unconnected. Similar qualitative knowledge about learning is also described by Van Rossum and Schenk (1984). These qualitative

conceptions could also be described as transformative because information undergoes a process of construction or transformation in relation to an individual's prior knowledge. Biggs & Watkins (1993) also refer to their third conception of learning and teaching as a qualitative one involving the active construction of meaning. Students understand and actively interpret the world rather than passively receiving information imparted by the teacher (Driver & Oldham, 1986).

This qualitative conception of learning is based on the constructivist view, which stresses that knowledge is not 'out there' waiting to be discovered. People actively construct knowledge for themselves and what is learned depends on what is already known. The most important determinant of learning is existing knowledge, so what one individual understands about something is not what another might understand. Therefore, argue Biggs & Watkins (1993), constructivism promotes teaching as the facilitation of learning that allows learners to develop self-direction rather than forcing constructions onto them. They conclude that the constructivist view of learning leads to a student-centered approach to teaching whereas earlier conceptions of learning are teacher-centered. In other words, constructivists believe that the world is a text and the readers (or learners) are not passive recipients of knowledge, but active beings who construct their own meanings and understandings based on their different life situations. Constructivism rejects objective reality believing that knowledge and meaning are constructions of the human mind. It is our own personal truth with its internal logic that we construct (Guidano 1987).

Let me conclude this section with a mention of the work of Habermas (1972), who described knowledge as partial and bounded by different perspectives. However, his

more recent work (1990) looks towards a social constructivist view of knowledge that exists beyond the individual, bounded by society's knowledge perspective of which the individual is an integral part.

2.1.4. Social Constructivism

Guidano (1991:206-207) defines the nature of an individual as his or her constant search for the construction of personal meaning within a social context stating that, "any knowledge is participatory and based upon the reciprocal negotiation of a mutual agreement rather than a mere transmission of data".

What Guidano (1991) theorized was the modern day awakening of social constructivism, which owes much to the work of Vygotsky. Vygotsky's theories have only started to affect our understanding of knowledge construction in the last thirty or so years although his two major works were published in Russian in the nineteen thirties. However, the first translation into English did not appear until 1962 from the MIT press (Vygotsky 1962) with reviews of his work not reaching a wide readership until the late seventies (Vygotsky 1978). This, coupled with little biological evidence until the work of Maturana and Valera in the 1990s, ensured that it is only recently that a social constructivist view of knowledge has begun to be seriously pursued.

Maturana (1990) gave further credence to post-positivist perspectives (Phillips 1990) by demonstrating that even when the most rigid scientific inquiry is conducted, the observer and the observed cannot be fully separated and therefore no truly objective conclusion can be reached. This means that the individual and everything and everyone in his environment contribute to the knowledge equation. By examining

knowledge from a biological and neurological perspective and reaching the same conclusions as social constructivists from other disciplines, Maturana has had widespread influence throughout the field of epistemology. "What he has done is to present a crisp, coherent, logically sound and internally consistent picture of how living systems function and how they create and utilize knowledge" (Efran & Greene 1996:107).

Vygotsky stressed the importance of active and social learning, since "... interaction is the process through which the negotiation of meaning and the creation of knowledge occur" (Gunawardena, Lowe & Anderson 1997). Maturana and Varela (1992:29) talk about "knowing as effective action" and other radical constructivists, such as von Glaserfeld, see all knowledge as shared and being constructed within social communities. Von Glaserfeld (1984) defines knowledge as something we build up as we try to order our experiences and construct reliable relations between them. We do this based upon our previous experiences and therefore our knowledge is not "real" as the knowledge constructions we have built become disturbed when the "real" world intervenes. He therefore questions whether we can ever have a true construction of the world and hence 'true' knowledge is only available in a societal state. "Knowledge and meaning are constructed and reconstructed over time within the social matrix" (Rosen 1996:20).

Gergen (1995) agrees that social processes and contexts trigger the formation of knowledge and concepts of reality. He emphasizes the importance of language within these processes focusing on the preferred vocabularies that social communities use to construct a local reality. Wink & Putney (2002:63) move this local reality into

education as "students, teachers and families act in dialogue with each other, jointly constructing what counts as knowledge in their life world". They then move to a broader spectrum stating that "learning does not take place in a vacuum and to understand learning we must also understand the social, cultural, and political context in which learning and development take place" (Wink & Putney 2002:85).

In summary, contemporary literature on knowledge all points to a review of traditional and cognitive concepts of learning. From teacher studies (Grossman 1990) and knowledge management (Harvard Business Review 1998) to biological and neurological studies (Maturana & Varela 1992), social constructivists now suggest that our construction of knowledge is not only dependent on the environment that surrounds us and clearly includes the people within that environment and our communication with them, but is held by the community and constructed by those within the community. These social constructivist theories view knowledge as a collective, communicative process fully dependent on the community and their interaction. These theories are based on the premises that we construct meaning out of our experience and that we are part of the knowledge constructing community; that knowledge is constructed in a social world (Kuhn 1970).

2.1.5. Summary

In this section, I have necessarily painted a very broad picture of the development of knowledge and learning. The structure of the section could suggest that the theories discussed follow a linear sequence, but this is clearly not the case. Whilst social constructivism is currently the dominant theory in many fields and institutions, research into the other perspectives continues to advance and influence our education.

2.2 Teacher Knowledge and Learning: An ELT-Focused Overview

This section looks specifically at teacher knowledge and learning and the discussion will, naturally, focus in the main on the education and development of English language teachers. Just over fifteen years ago Reynolds (1989) argued that our own knowledge base about teachers' knowledge was one that was constantly shifting and was clearly still incomplete. Four years later, Freeman & Richards asserted that too little was known about "the evolution of teachers' knowledge" (1993:212). This section traces what we do know about the evolution of teachers' knowledge, showing that teacher education and development has followed a similar path to the literature on knowledge detailed above with a clear trajectory from behaviourist practices through cognitivist approaches and on to social constructivist models. Whilst this trajectory would seem to imply that one approach is at the expense of the others, we would, of course, hope that good teacher education and teaching takes the strengths from each model, and case studies of current practice (for example Johnson 2000) indicate that this is indeed the case.

Many others (Bernhardt & Hammadou 1987, Lange 1990, Richards & Nunan 1990, Freeman & Richards 1996, Freeman & Johnson 1998, Tsui 2003) have pointed to the lack of detailed research in ELT teacher education, some suggesting that this was due to the near "obsession" (Lange 1990:253) with methods above all else. Whatever the reason, it leaves us with a history of the field which is dominated by concerns other than the teacher (Lange 1990, Freeman & Richards 1996). Given this, I have found the best framework against which to trace the development of teacher education in TESOL the one provided by Wallace (1991). His framework details three major teacher education models: the craft model; the applied science model; and the

reflective model. Since 1991, developments in teacher education (Freeman & Johnson 1998, Burns 1999, Griffin 1999, Johnson 2000, Tsui 2003) indicate that Wallace's reflective model can be more accurately divided into reflection and interpersonal development. The section below on reflection draws heavily on Wallace, whereas the interpersonal development section remains true to the collaborative approaches, which Wallace briefly mentions (1991:117-8).

2.2.1. The Craft Model

This model is based upon novice teachers learning their 'craft' from experienced professionals. The wisdom of expert teachers is passed on to trainees who are expected to learn by imitating and following the expert's instructions. The key to the model is the imitation of the senior practitioner and the unconditional acceptance of their practice (Stones & Morris 1972, Wallace 1991).

Stones & Morris (1972) state that this was how teacher education was traditionally organised until the late 1940s with early teacher training schools attaching student teachers to a master teacher who told them what to do and showed them how to do it. The craft model was aimed at "the accumulation of information and the inculcation of habits" (Morrison & McIntyre 1973:60). It was a training model as opposed to an education model, and, therefore, I use the term 'training' throughout the rest of this section.

This approach to teacher training is based upon the premises that teaching is the execution of an activity in the classroom (Freeman 1991) and that novice teachers

can, therefore, be trained to execute their classes effectively by following the example set by their more experienced masters.

Teaching is viewed as a series of practices to be learnt and novice teachers seen as a blank slate who can learn the expert practice they are being trained to mimic with no reference to their previous learning experiences. The expert teaching practice imparted should replace any previous conceptions the student teacher might hold. By seeing teaching as a matter of behaviour and delivery, teacher training becomes the transmission of knowledge and the inculcation of behaviour (Morrison & McIntyre 1973).

Stones & Morris (1972:7) discredited the traditional craft model as being little more than 'sitting with Nellie' on the production line. They pointed out that the model is conservative, relying on a static, non-changing society. This is not a society which we can relate to today in our fast-paced, ever-changing technological era. In the dynamic state of today's methodologies and syllabi, a new recruit today can be, in some ways, better informed than the old master, especially where technologies are involved.

The craft model was revived in the mid-1970s by Stenhouse (1975) who used the analogy to complex metallurgy made by Atkin (1968) in a sound, well-argued discussion that focused on the complexity of teaching. He reminds us that the craft model has much to offer as long as it is not seen as a practice in mimicry. As we will see in later sections, craft model practices have been developed into effective dialogic, reflective and interpersonal teacher education approaches. In this way, the craft model is moved from a training approach to an educational one.

However, the static nature of the craft model is still a drawback especially given the tremendous developments in every area of language teaching from sociolinguistics to the scientific knowledge of how we learn and behave. This scientific reference brings us naturally onto the view of teaching as 'applied science' according to Wallace (1991).

2.2.2. The Applied Science Model

I view the term 'applied science', used by Wallace (1991), as equivalent to Schön's (1983, 1987b) 'technical rationality' and parallel to the product-process model discussed by Freeman (1996). According to Wallace (1991), the applied science approach is the traditional and, probably, the most prevalent model underlying training and education for professions. The model derives its authority from nineteenth and twentieth century empirical science, and it redefines practical knowledge in terms of assessable objectives using scientific knowledge.

Stones & Morris (1972) rejected unscientific approaches, including the craft model, stating that a mass of empirical data and study already existed and therefore teaching problems could be solved through the application of empirical science to the desired objectives. Since the applied science model continued to view teaching as a matter of behaviour and delivery, the main focus was on how best to implement methodology and curricula. This allowed teaching to be reduced to a series of skills and practices, expressed as learning objectives, against which a teacher's practice could be evaluated.

This results in the findings of scientific knowledge and experimentation being conveyed by experts in the relevant areas, and presumes that changes to scientific knowledge can only be made by experts and not by practitioners. "This tendency for experts to be well removed from the day-to-day working scene is more pronounced in teaching than in some other professions" (Wallace 1991:10). Therefore, the application of this model in teacher education resulted in the almost complete separation of research and practice.

The applied science model not only produced the institutional separation of research and practice, it presented "the notion of the normative professional curriculum ... First teach them the relevant basic science, then teach them the relevant applied science, then give them a practicum in which to practice applying that science to the problems of everyday life" (Schön 1987a). In other words, the model ensured a focus on methods, curricula, students and materials with little consideration of the teacher's role beyond the implementation of practice based upon the relevant applied science and research. Freeman (1996:353) claims that throughout the last century, educational research "generally focused on student learning and achievement. Thus teaching has been examined almost exclusively through that lens". His review of the process-product research paradigm (Dunkin & Biddle 1974, Chaudron 1988) that evolved from this focus demonstrates that teaching was cast as a series of behaviours and activities that could be evaluated against a series of learning outcomes.

This separation of research and practice (Schön 1983, Woods 1987, Wallace 1991, Yeatman 1996) and the resultant view of teachers as deliverers of knowledge (Stones & Morris 1972, Wallace 1991) have also been criticized by Palmer (1998), who takes

teachers themselves to task for getting caught up in the "objectivist myth" and assuming they must now "give" to their students in the same "unexamined" way. Whilst stating, "in the objectivist myth, truth flows from the top down, from experts who are qualified to know truth...to amateurs who are qualified only to receive truth" (1998:100-1), Palmer's "amateurs" can be read as both students and student teachers.

Palmer's criticism is over-stated although many teachers would agree that empirical science has not solved any of the teaching problems prevalent in today's classrooms – such as discipline – which if anything have worsened over the years (Wallace 1991: 11). Arguably, the most scientific of teaching methods anchored in the dominant psychological theory of the time (Behaviourism) – audio/visual or structural drill – resulted in the most un-motivating and irrelevant learning experiences.

Nevertheless, it is indeed extraordinary that almost 25 years earlier, Barnes & Shemilt (1974) could state critically that the normal assumption in education was a transmission model, and yet nearly twenty years after that Freeman (1991) was still able to state in a plenary address in Hong Kong that "this current overdependence on knowledge transmission is, in my opinion, the Achilles heel of second language teacher education.... Knowledge-transmission models, and the programs which implement them, assume that teachers' classroom practice can be directly shaped by other people's ideas". Two years later, Freeman & Cornwell (1993: xiii) again argued that, "the legacy of knowledge-transmission is pervasive" in teacher education and, reluctantly, we must admit that much teacher education pays scant attention to the discussion and exchanges between experienced and novice teachers.

In 1996, Dinham and Scott (1996:47) continued the attack on the applied science model stating that "few teacher education programs concentrate on the daily, practical expectations of teaching". Teacher education was still largely viewed as the preserve of researchers and educators removed from the classroom, transmitting their knowledge to the practitioners.

Between the critics of the 1970s and 1990s, Schön (1987a) produced a more balanced stance against the model arguing that applied science should not "be thrown out the window. I'm arguing that it has a special zone of relevance which depends on our ability to do these other things, on the one hand to set problems in ways that the categories of applied science can fix and fit and, on the other hand, to fill with art the gap between theory and technique and concrete action".

In a similar vein, Wallace (1991) saw benefit in the applied science model. He drew a connection between the initial use of micro-teaching in studies at the Universities of Stanford and Berkeley (Bartley 1969, McGarvey & Swallow 1986, Borg et al 1970), the applied science model and behaviourism. However, rather than dismissing micro-teaching, he concludes that it can be a powerful tool when used for reflection and experiential learning rather than for shaping behaviour. (Wallace 1991:93) Micro-teaching becomes a reflection-in-action approach when it is used for professional reflection instead of mimicry. In this way, Wallace (1991) guides us from an applied science model and into his reflective model without throwing away the previous model in its entirety.

2.2.3. The Reflection and Personal Development Model

As Johnson (2000:3) notes, "the notion of reflective teaching is not new to TESOL teacher education" and suggests that this was in reaction to the view of "teachers as technicians who simply act as conduits for the implementation of theories, methods, and curricular efforts that come down from theorists who remain far removed from classroom life". Reflective teaching is today considered mainstream in TESOL teacher education (Johnson 2000:5), and it has been widely researched over the last decade (Wallace 1996, Zeichner & Liston 1996, Richards 1998, Johnson 1999).

Almost every writer on reflection acknowledges Dewey's (1938) founding force behind reflective approaches. However, in line with the overall framework of this section, I focus here on Wallace (1991), who draws on Schön's (1983) division of professional knowledge into two areas, naming them received knowledge and experiential knowledge. The received knowledge of facts, data and theories from areas such as linguistics and assessment figures predominantly in many teacher education programmes (Wallace 1991:12). This knowledge is research based and received rather than experienced by the teacher and mirrors the knowledge upon which the applied science model focuses. The other area of knowledge, experiential knowledge, is equivalent to Schön's knowing-in-action and reflection (Wallace 1991:13). This knowledge is tacit and built upon experience and cannot be easily stated in terms of rules and procedures. Teacher education should address both types of knowledge in order to remain true to the reflective model (Wallace 1991:15).

Schön (1987a) in a presentation to the American Educational Research Association expresses with great clarity the difference between reflection-in-action and reflection-

on-action. The former is "tacit and spontaneous and often delivered without taking thought, and is not a particularly intellectual activity. And yet it involves making new sense of surprises, turning thought back on itself to think in new ways about phenomena and about how we think about those phenomena. And examples lie in ordinary conversation, making things, fixing things, riding bicycles". On the other hand, reflection-on-action "IS an intellectual business, and it DOES require verbalization and symbolization". Williams & Burden (1997:54) contend that reflection-on-action is required to make our tacit knowledge, which is intuitive, implicit and often incorporates reflection-in-action, explicit. We can then continuously generate questions and check our emerging theories against our own experiences.

A teacher can have as many as 1,000 interpersonal exchanges each day, and how the teacher makes these multiple decisions is their knowing-in-action. Reflection is the conscious exploration of what is behind these decisions and can occur while the process of knowing-in-action is occurring (MacLeod & McIntyre 1977:266). This implies that teacher decisions are made outside the classroom as well as inside, viewing the teacher's role as far more than the delivery of lessons. This agrees with Zeichner's (1983) definition of reflective teaching that encompasses all levels, with the first level corresponding to Cruickshank & Applegate's (1981) restriction of reflective teaching to classroom lessons. This is a restriction which Bartlett (1990:202) applies as well although I would claim here that the cycle of activity which he (1990:208-9) adapts from McTaggert & Kemmis (1983) and Smyth (1987) could be applied to any teacher reflective practice within the classroom or not.

In the same year as Bartlett's work, Richards (1990:119) acknowledged that reflection was "a key component of many models of teacher development". Their work and that of others (Wallace 1991, Richards & Lockhart 1994) ensured that teacher education courses began to encourage self-directed teacher development through the implementation of the reflective model. This model emphasizes the shift in teacher education from one of knowledge transmission, to one of thought and discourse that helps teachers create their own professional identity, status and authority (Gee 1990). The reflective teacher is "more able to respond creatively to situations out of choice, rather than act mechanically to situations out of habit" (Underhill 1993:187).

Reflective teaching therefore sees the teacher at the heart of experiential knowledge, and the teacher's role as one that extends beyond the classroom. Viewing teaching from this broader perspective, Wallace (1991:52) suggests "that the 'received knowledge' element should both directly inform the 'experiential knowledge' element and be directly informed by it". The model "deliberately highlights the trainees and what they bring to the training / development process" (Wallace 1991:50), and unlike the applied science model with its focus on experts remote from the classroom, it sees practical experience "at the very core of the reflective model". In this way, the model ties practical experience and theoretical knowledge together and narrows the divide between researcher and practicing teacher (Wallace 1991:52).

The model does not dismiss the importance of research since "without reflection on a theoretical level", we are unable "to recognise and explore the contradictions in our practice" (Winkler 2001:445). Winkler also contends that teachers need to articulate and confront the tacit assumptions they make in a theoretical way so that they do more

than simply share a classroom story. Using theory as a tool for reflection requires teachers "to actively establish increasingly complex and efficient relationships between their context-specific experiences and de-contextualised systems of thought in order to discover new questions about the way they work" (Winkler 2001:447). I use these references from Winkler to again demonstrate how research on reflection has narrowed the researcher-teacher divide in the last decade so that it is no longer surprising for teachers to be actively involved in research today.

Jasman et al. (1998) investigated teacher educators' knowledge, but many of the questions they posed were as relevant to teacher learners. They explored what they called the "borderland" relationship between university teacher educators and school teaching practitioners, posing the questions: 'What is/are the knowledge(s) of this borderland?'; 'How is that knowledge acquired?'; 'And whose knowledge counts as legitimate?' (1998:5). They suggest (1998:16) that contextual knowledge, or as Clandinin and Connelly (1996) describe it, the "professional knowledge context", characterises the borderland between theory and practice. I am not convinced of their final claim, but their research indicates the strongly held belief in the existing divide between researchers and practitioners, and how researchers are working towards narrowing that divide.

One of the strengths of the reflective model is that it does not dismiss teacher education approaches from other models, but redesigns them in ways that promote reflection. For example, the observation of teaching, so heavily researched under an applied science model (Flanders 1960, Jarvis 1968, Politzer 1970), is not treated as a matter of mimicry but one of reflection that traces what lies behind a technique and

acknowledges how complex the teaching process is (Clarke 1983, Zeichner & Liston 1996). The model similarly builds reflection into mini-teaching approaches giving teachers the opportunity to connect experience and theoretical knowledge (Wallace 1991). As Knezevic & Scholl (1996:79) have observed: "Without reflection, teaching is guided by impulse, intuition or routine, and subsequently kept within the realm of tacit knowledge".

Teacher education programmes now routinely include reflective activities and even modules that provide teacher learners with a variety of reflective techniques. One of the most researched techniques is the use of journals, and the contribution of this research to the position of reflection in teacher education has been well documented (Bailey 1990, Jarvis 1996, Holly 1997, Burton & Carroll 2001, Garmon 2001, Shin 2003). Shin's article is an example of how journal research is investigating the use of technology mediums to promote reflection. Technology is one of the two areas in which the reflection model is adapting to the latest research and practice. The other is collaboration and the move away from the private to the social.

Williams & Burden (1997:54) highlight the importance of comparing our reflections with the reflections of others, and Wallace (1996:292) further suggests that action research is a form of structured reflection and its main aim is to facilitate the reflective cycle. Finally, Farrell (1998) gives an excellent overview of reflective practices and demonstrates how the reflection model can move from a private experience to a shared collaboration that would fall under the interpersonal development model. These three references are an indication of how the interpersonal development model

emerged, stressing the importance of the wider professional community and collegial support and communication in teacher education.

2.2.4. The Interpersonal Development Model

Current literature, led by early proponents such as Dubin & Wong (1990:282), argues for the use of developmental cognitive techniques to provide teacher learners with the opportunity to enquire, reflect and develop their own teaching in the social situations of the classroom and staffroom they work in every day.

This shift to a focus on the social aspects of teaching life is as profound as the move from the transmission models to the reflection model. The teacher is no longer seen as an individual pursuing and constructing knowledge independently, but as a professional member of a community which reflects, researches and collaborates in the generation of knowledge that affects us all. "The traditional relationship between teacher as all-powerful knower and student as apprentice learner moves toward a relationship of greater equality, of colleagues in a profession where each has something of value to contribute" (Porter et al. 1990: 234).

Throughout the literature on reflection, the importance of interpersonal communication is implied if not explicitly stated. Knights (1985:90) points out that "... talking through one's ideas with the thoughtful attention of another person is a powerful way of clarifying confusion, identifying appropriate questions and reaching significant heights". Schön (1987a) identifies the other person as a 'coach' when he claims that the best dialogue is one of "reciprocal reflection-in-action" where both coach and student are "reflecting on, and responding to, the message received from

the other". Bartlett (1990:210) sees the other person as a teaching colleague and states that sharing and collaboration offer "the possibility of extending one's insights about oneself as teacher to oneself as an individual member of a larger community".

In his book presenting the reflective approach upon which this section is based, Wallace (1991:37) examines 'group mode' delivery in teacher education by describing four common types of group organisation stating that all of them are "essentially interactive in nature". The group mode creates discussion which allows teacher learners "to articulate their own perception" of new ideas and input (Wallace 1991:41), and he criticizes many training programmes because "the practical experience and reflection on the application of new ideas from 'received knowledge' is private and not shared (1991:53). He emphasizes that this does not mean personal experience is downgraded but accentuates "the complimentary importance of shared experience of practice" (Wallace 1991:54).

In research on observational approaches Brock et al (1992) and Carrier (1997) have focused on those that promote discursive reflection, and Knezevic & Scholl (1996:79) see collaboration as giving teachers "an opportunity for heightened reflection". In his investigation of teacher beliefs, assumptions and knowledge, Woods (1996) recognises the importance of collaboration with others especially in his discussions on experience and conflict.

Wallace moves towards a clearer position for interpersonal development in his other major work on Action Research (1997) stating that "collaborative approaches.... can do much to sustain motivation, save time by the allocation of different tasks ... and

generate richer input from the combined talents and insights of those involved" (1997: 41), and claiming that "observation of professional action is most easily done on a collaborative basis" (1997: 46). He continues, in the chapter entitled "No teacher is an island" (1997:207-213), to argue that a teacher's job is largely a lonely one where a sense of professional isolation often acts as a barrier to professional development and that action research can help to break down these barriers with a section on collaborative action research and a brief discussion on the power of technology to promote informal discussion.

The teaching philosophy detailed in this section is one that draws heavily on "the idea that action research should contribute to the empowerment of individual teachers" (Edge 2001: 4), and the concept that self-reflective inquiry aims to primarily improve our own practices (Carr & Kemmis 1986). It sees that "becoming skilled as a teacher... requires a combining of reflection on practical experience and reflection on theoretical understanding" (Shulman 1988: 33), but further, and most importantly, this 'self-reflective inquiry' and 'reflection' should be voiced, discussed and shared with others so that it can remain active both within us and the teaching community around us. This connection to others in our field requires collaborative learning (Edge 1992), meaning it is not enough to reflect. We need to work on our reflection with others both inside and outside the classroom, because learning from experience is neither automatic nor effortless (Grossman 1990).

As published research moved from a personal reflective model towards an interpersonal development model of teacher education, more and more authors began to draw on social constructivist theories of knowledge. Palincsar et al (1998:6) argued

that the answers to questions raised about the effectiveness of teacher education "must reside in contemporary discussions of the social nature of learning", which speak to the "interdependence of social and individual processes in the co-construction of knowledge".

Despite this move towards a more teacher-centred, interpersonal research paradigm, it could still be argued that professional development schools continue to perpetuate the emphasis on 'practical knowledge' within schools whilst the university's role is still to conduct (and control) the research agenda albeit collaboratively (Jasman et al. 1998). This privileging of academic research over teachers' practical knowledge (Elbaz 1983, Yeatman 1996) is evident in various themes in the literature. For example, the importance of developing teachers as researchers (Gore & Zeichner 1995, Tripp 1987), improving the relevance of educational research, (Hargreaves 1997, Kennedy 1997) and finding ways of enabling teachers to have a voice in developing the knowledge base about teaching (Cochran-Smith & Lytle 1993, Zeichner 1994) are predicated on the value of practitioner research being recognized by the academic community in particular rather than seeking recognition from other practitioners. Yeatman (1996:285) argues in a similar vein that even though "action research looks like practice friendly research (it) continues to privilege science as the proper mode of knowing". Even though this quote has been succeeded by a great deal of teacher-driven research from the classroom over the last decade, I would argue that the bridge between academic research and classroom practice is still to be completed.

Doff (1988) points out that this is not the only bridge that we need to consider in teacher education. He draws attention to the two separate worlds in ELT (1988:8).

The first of native speaker teachers with small classes in well-resourced institutions and the freedom to experiment and the far more common scenario of large classes, set syllabus, little or no resources and an institutional view of the teacher as a deliverer of information. These separate worlds are even more distinct since the advent of technology, and teacher education must find a way to prepare teacher learners for both worlds.

Nevertheless, Johnson (2000:3) draws attention to the "social dimensions of this reflective process", as she (2000:1) points out clearly in her introduction to Case Studies in Teacher Education, "there is a quiet revolution going on in TESOL teacher education" which is embracing "the processes of teacher socialization that occur in classrooms, schools, and the wider professional communities where teachers work". The quiet revolution can ensure that we finally bridge both gaps.

2.2.5. Summary

This section has reviewed four models of teacher education and suggested they paint a similar trajectory to the previous section on knowledge with the craft model and applied science model drawing upon behaviourist theories of mimicry and knowledge imparted from outside. The reflective model draws heavily on cognitivist and constructivist theories, whilst the interpersonal development model can be seen to use theories from social constructivism.

2.3. Teacher Knowledge Development: A contemporary model

I approach this section with the belief that learning to teach "requires experiences and settings which support reflection, collaboration, relational learning and the creation of

communities of inquiry" (Beattie 1997:126), and a conviction that "a professional knowledge of teaching has many dimensions - cognitive, social, organizational, practical, moral, aesthetic, personal, political and interpersonal" (Beattie 1997:126). I am also influenced by Sachs, who states that, "when teacher research is complemented by academic research new types of knowledge can be produced and new forms of teacher and teacher educator practice and professionalism can be initiated" (1997:54).

The theoretical model of teacher knowledge that I present in this section is an attempt to provide a diagrammatical representation of how we construct and process knowledge. It addresses the "tighter coupling of theory and practice in the context of a broader and deeper base of knowledge about learning, development and teaching" which Darling-Hammond (1999:227) saw as "the key feature of teacher education for the twenty-first century". And finally, it meets Johnson's definition of professional development as "a collaborative effort, a reflective process, a situated experience and, a theorizing opportunity" (2002:1).

As noted in the previous section, our knowledge base for teachers' knowledge is still incomplete (Reynolds 1989, Freeman & Richards 1993). However, current research on teachers' knowledge is "reconceptualizing the notion of knowledge so that it includes L2 teachers' ways of knowing" (Golombek 1998:447). For example, Grossman (1990) looked at the difference between the training required for content knowledge against the development required for pedagogical knowledge, and Freeman & Johnson (1998:405) were concerned with the differences between conceptual and perceptual knowledge. More recently, Tsui (2003) brought together

the proliferation of teacher knowledge terminology into a coherent whole. This section builds upon Tsui's conclusions and offers a theory of teacher knowledge that is supported by the literature outlined in the rest of this chapter.

The model of teacher knowledge development put forward in this section brings together as a coherent whole the 'formal theoretical knowledge' that is "publicly represented" and "negotiable" (Bereiter & Scardamalia, 1993:62) and delivered through formal education programmes such as Diplomas, Degrees and Masters with the informal practical knowledge that is personalised, situated in context and, more often than not, learnt on the job.

Although Figure 2-2 on the next page separates knowledge into discrete types based on previous literature, it must be noted that teachers' knowledge is in fact only bounded by an ever-moving outer parameter that expands as knowledge grows. The study realises that practicing teachers use all knowledge types at any time, often simultaneously and in a complex intermesh that cannot be truly analysed. The figure is therefore analytical rather than real. It is a theoretical model that helps us understand how it is possible teachers work and develop, rather than a real description. Teacher knowledge "functions as an organised whole" (Feiman-Nemser & Floden 1986:513), and it is "an integrated whole that cannot be separated into distinct knowledge domains" (Tsui 2003: 65).

2.3.1. Self knowledge

Self knowledge is seen as the permeable core of everything we are as teachers. I would argue that we cannot separate the person from the teacher. Even those teachers

I know who insist that their teaching persona is far removed from their personal and social identity reveal a clear awareness of professional self. So, at the heart of any model on teacher knowledge must be knowledge of self, an awareness of who we are professionally and why we do what we do.

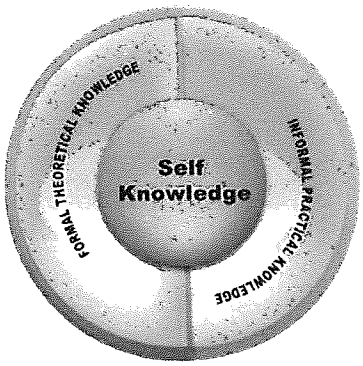


Figure 2-2: Model of teacher knowledge development – the core

This model of teacher knowledge with the situated, professional self at the core is mirrored by the centrality of the self in the reflective aspect of Schön's knowing-in-action (Schön 1983). Schön drew heavily on the work of Ryle (1949) and Polanyi (1966) and placed reflection and reframing at the heart of teachers' knowledge.

Dreyfus & Dreyfus (1986) acknowledged in their discussion on intuitive and 'tacit knowledge' the importance of deliberation but qualified this against the time teachers realistically have to reflect at all. They certainly did not see the process of reflection as central to the development of teacher knowledge. Eraut (1994) agreed with Schön, placing conscious deliberation at the heart of professional work, and the theoretical model proposed in this chapter does the same with the professional self placed at the heart of the model binding informal practical knowledge (Elbaz 1983) and formal theoretical knowledge together. The model thereby represents the importance of

reflection. It represents how informal practical or tacit knowledge development can be triggered by new formal theoretical knowledge. Above all, it represents how the practical application of formal theoretical knowledge is centred by knowledge of the professional self as this knowing-in-action is supported by reflection. This centrality of reflection moves the professional self to the core of teacher knowledge development as the teacher works on cognitively processing new knowledge onto their existing knowledge schemata.

The description above is not dissimilar to the knowledge of self posited by Elbaz (1983). I suggest that teachers' knowledge of their professional self cannot be separated from their teaching persona and how they develop and expand their knowledge within their local context. It could be argued that the professional self is not simply the core of the model but is, in fact, the whole model. Our knowledge is who we are professionally. However, I want to ensure that the model does not ignore the centrality and importance of the self in teaching and the knowledge development of ourselves as teachers (Beattie 1997). The model is a theoretical construct to help us understand how our knowledge is formed and to this end the knowledge of self must be explicitly stated. The recognition of the importance of professional self knowledge has been demonstrated continually over the past decade in both the literature (Goodson 1992, Bailey et al 2001, Richards 2003), with the increase of teacher narratives and case studies (Freeman & Richards 1996, Bailey 1997, Johnson 2000), and teacher education programmes that focus on the individual's knowledge at the start of their courses (Richards & Nunan 1990, Wallace 1991, Head & Taylor 1997, Borg 1998, Freeman & Johnson 1998, Díaz-Rico 2000).

So, the centrally situated blue self knowledge circle represents teachers' knowledge of themselves professionally and how this impacts on their teaching persona.

2.3.2. Informal Practical Knowledge

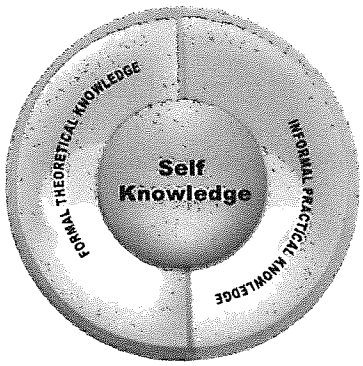


Figure 2-3: Model of teacher knowledge development – the core

On the right of the figure under 'informal practical knowledge' I include a wide variety of terms from the literature. I argue they can all be subsumed under this general heading which could translate as the experiential knowledge of teachers learnt on the job and in the classroom. It includes practical knowledge, classroom knowledge, personal practical knowledge and above all teachers' knowledge of their local context including students, curriculum and institution.

The 'practical knowledge' of Elbaz (1983), which is drawn from the works of Schutz (1962-73) and Dewey (1938), is essentially knowledge created from experience in the classroom or 'experiential knowledge' (Lanier & Little 1986, Anning 1988, Munby & Russell 1991). All these knowledge terms clearly fit into the model above under the term 'informal practical knowledge'.

I would also include 'domain knowledge' (Chi et al 1988, Glaser 1990) under this term as Glaser & Chi (1988:xxi) state that 'domain knowledge' is largely based on thousands of hours of practice and that experts are able to access a large organised body of procedural knowledge.

This 'domain knowledge' is closely tied to the 'classroom knowledge' of Berliner & Carter (1989), which can in turn be linked to the 'instructional knowledge' of Elbaz (1983). This is the arena where the teacher develops their 'informal, experiential knowledge' that remains largely 'tacit' and 'intuitive'. This knowledge mirrors its theoretical 'pedagogical content knowledge' counterpart, but it is the knowledge that the teacher builds up from their direct experience in the classroom as opposed to the 'formal theoretical knowledge' to the left of the model.

Teachers may well try activities from formal knowledge sources, but their personal experience of those activities in the classroom and how they work with their students in context is the trigger for this informal, experiential knowledge growth. As Carlgren (1996:26) notes, "if formal knowledge is not grounded in, or integrated with, tacit experience-based knowledge, the contradiction (between what is considered that teachers should do and what they actually do) will remain".

A further term that I include in this broad 'informal practical knowledge' section of the model is the 'personal practical knowledge' of Clandinin & Connelly in their works spanning the decade from 1985 to 1995 that use an experiential philosophical approach to studying teacher knowledge through narratives. The definition of 'personal practical knowledge' is best given by Clandinin (1992:125) as "knowledge

that reflects the individual's prior knowledge and acknowledges the contextual nature of that teacher's knowledge. It is a kind of knowledge carved out of, and shaped by, situations; knowledge that is constructed and reconstructed as we live out our stories and retell and relive them through processes of reflection". This definition clearly builds upon the self knowledge core described at the heart of the model in the previous section.

Finally, I would suggest that 'informal practical knowledge' also covers 'situated knowledge' (Leinhardt 1988, Leinhardt 1989, Lave & Wegner 1991, Fenstermacher 1994, Benner et al 1996, Putman & Borko 2000) which can be defined as "local understanding" (Freeman 2000:1) or the knowledge that is "constituted in the settings of practice" (Lave 1988:14), and can be seen as the dialectical link or relationship between content and practice (Scribner 1984). It is the teachers' knowledge of their context including the knowledge of their students, institution and community. The context in which teachers work is not simply the container where knowledge is demonstrated, it is the situation which teachers respond to in order to develop their knowledge. This places the situation close to the centre of the model of teacher knowledge growth and development (Mercer 1995:68) and mirrors the recent proliferation of teacher narrative studies.

So, the right hand informal practical knowledge area represents the practical, experiential knowledge of teachers based on their classroom experiences in their local contexts.

2.3.3. Formal theoretical knowledge

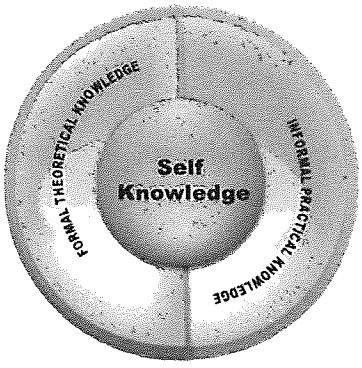


Figure 2-4: Model of teacher knowledge development – the core

On the left of the figure under 'formal theoretical knowledge', a term partially taken from Bereiter & Scardamalia (1993), I have included three broad types of knowledge from the literature. These are theoretical knowledge, subject matter knowledge and pedagogical content knowledge.

First, there is the empiric-analytical perspective of 'theoretical knowledge' as opposed to the 'practical knowledge' of Elbaz (1983). Elbaz contrasts the 'knowing that' of practical knowledge with the 'knowing how' of 'procedural knowledge' (Glaser & Chi 1988), which is the 'formal theoretical knowledge' teachers draw upon when applying their practical 'domain knowledge'.

Leinhardt & Smith (1985) and Shulman (1986) make a similar distinction with their 'declarative knowledge' (what) and 'procedural knowledge' (how). Williams & Burden (1997:158) refer to declarative knowledge as information and procedural knowledge as skills. However, Woods (1996:192) sees this distinction becoming

increasingly blurred, and so I revert to Calderhead's (1988) practical knowledge versus formal theoretical knowledge.

This model brings declarative knowledge and theoretical knowledge together under the heading of formal theoretical knowledge, which also includes subject matter knowledge and pedagogical content knowledge. All these are tied together under the heading of 'formal' as the knowledge is seen as accepted by the wider academic and educational community through publications, presentations and informed referencing. The formalization is expounded as training institutes include this knowledge in their courses and programmes. This publication and institutionalization of knowledge creates a body of 'formal theoretical knowledge'.

The second broad types of knowledge to be incorporated under 'formal theoretical knowledge' are 'content knowledge' and 'subject matter knowledge'. I use these latter two terms interchangeably encompassing general references to all types of content matter (Schwab 1964, Wilson et al 1987, Shulman 1987, Carlsen 1991, Furlong & Maynard 1995) or specific references to one type of subject matter (Ball & McDiarmid 1990) such as Maths (Ball 1991), Science (Munby & Russell 1991), English (Grossman 1990, Hillocks 1999), History (Wilson & Wineburg 1988) and ESL (Woods 1996, Tsui & Nicholson 1999). Under this category, I also include 'disciplinary knowledge' (Wilson & Wineburg 1988) as they use the term 'disciplinary' in the sense of discipline or subject.

The third and final type of knowledge to be included here is 'pedagogical content knowledge' (Livingston & Borko 1989, Wineburg & Wilson 1991, Grossman 1990,

Tsui & Nicholson 1999) which I use in the sense of the knowledge of teaching, as opposed to the knowledge of the subject. I use the term in a similar way to Shulman (1987), who also separates it from 'subject matter knowledge' although he placed both under a heading of 'content knowledge'. 'Pedagogical content knowledge' is the management of learning that is taught in PGCE courses after students have gained their first degree in their 'subject matter'. Other authors have considered 'pedagogical content knowledge' and 'subject matter knowledge' as inseparable (McNamara 1991, MacEwan & Bull 1991), and this is probably true in practice as Calderhead & Miller (1986), Bennett (1993) & Woods (1996) state. Nevertheless, the distinction is useful in an analytical model as it ensures one is not ignored in preference to the other.

So, the left hand 'formal theoretical knowledge' area represents the theoretical and empirical knowledge of content and pedagogy that is widely accepted by professional bodies within English Language Teaching.

2.3.4 Theorising Practical Knowledge

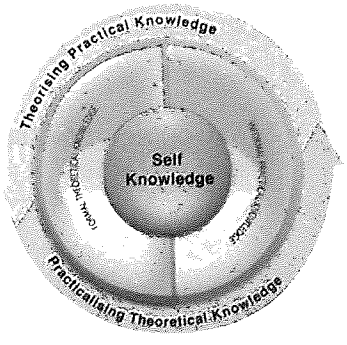


Figure 2-5: Model of teacher knowledge development – the first cycle

Inspired by Tsui (2003), the blue arrow at the top of the figure links 'informal practical knowledge' and 'formal theoretical knowledge'. It represents 'theorising

practical knowledge' that can be defined as the search for formal knowledge by teachers based upon their personal practical experience. The search is often for specific knowledge informed by teachers' deliberations and reflection on their practical classroom experiences.

It is the narrowing down, focusing and shaping of formal theoretical knowledge that most good teacher training programmes focus upon. It is the process of building upon a teacher's experiential knowledge and helping them to align it to 'theoretical knowledge'. Reflection on practical experiences highlights the gaps in a teacher's knowledge as well as the needs of the teacher in context. The 'theorising of practical knowledge' is the process whereby a teacher begins to fill those gaps and meet those needs.

So, the top blue arrow, 'theorising practical knowledge', represents the teacher's search for the formal theoretical knowledge that they can align to their experience. It is the process whereby teacher's knowledge expands as they learn how to theorize their practice.

2.3.5. Practicalising theoretical knowledge

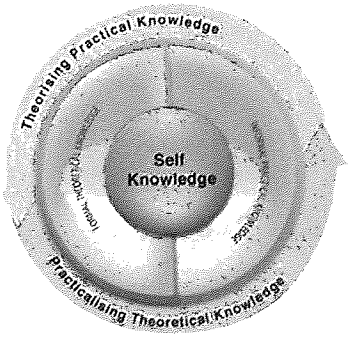


Figure 2-6: Model of teacher knowledge development – the first cycle

The green arrow at the bottom of the figure links 'formal theoretical knowledge' back to 'informal practical knowledge'. It represents 'practicalising theoretical knowledge' that can be defined as the experimental classroom practice whereby teachers try out new ideas, methods, approaches, content and activities in the classroom. It is to all intent and purposes Wallace's applied science model. It is where teachers confirm their 'formal theoretical knowledge' as they attempt to generate new practice in their classrooms. I would suggest that this is where teachers try and create a broader base and thereby complete a developmental cycle which might give them the potential to become researchers in their own right.

So, the bottom green arrow, 'practicalising theoretical knowledge', represents the teacher's search for new classroom practices that mirror their often newly articulated theories or their developing and expanding formal theoretical knowledge. It is the process whereby teacher's knowledge can expand as they learn to practically apply theories often through research of their classroom practice.

It is this continual cycle of theorizing practical knowledge and practicalising theoretical knowledge that creates the cycle of individual teacher knowledge. The diagram (Figure 2-5) aims to capture the complexity of teacher knowledge, the circularity of knowledge growth through practice and theoretical input and the centrality of the local situation.

The remainder of this literature review will see how this model maps onto knowledge and learning via the Worldwide Web, and the research will aim to develop and build upon this theoretical model of teacher knowledge development.

2.4. Knowledge and Learning on the Web

This section not only looks at the literature on web training and education but also reviews a sampling of websites and the theories behind them, concluding that many of them do not fulfill their promise but remain rooted in traditions of knowledge transmission.

The literature and websites reviewed in this section are purposefully not restricted to EFL training sites as the principles behind any Worldwide Web education site are relevant to the pedagogical principles we are seeking to develop around our theory of teacher knowledge.

Web training and education is a relatively new field, but it has followed a very similar history to the advances in knowledge theory and teacher education detailed above, albeit in a much shorter time span. When education on the web began it was very much training and transmission based primarily on the Internet as a delivery mechanism for material (Bork 1996, Schank 1998, Song et al 2004). It was a new medium for the simple transmission of knowledge and information to those who may need or want it and developers viewed knowledge as did the behaviourists. Even some of the more recent knowledge theories from management and web design use the behaviourist term 'knowledge objects' as the smallest particle of information that can be learnt (Rosenberg 2001, Entwistle & Marton 1994), and the terminology reflects the pedagogical philosophies of many practitioners on the web today.

The increase in accessibility to the web and email communication then allowed trainers using the Internet to broaden the scope of their training with direct interaction

between trainer and trainees via electronic mail (Dori et al 2003, Gal-Ezer & Lupo 2002, Light et al 2000, Rafaeli & Ravid 1997). Web site developers and trainers began to explore the power of email communication in producing the conditions required for the construction of knowledge through reflection, and educational web pages began to promote more trainee reflection on the material posted as well. More recently, the huge advances in technology, for instant communication via synchronous mediums like chat rooms and video conferencing along with larger and faster bandwidths, have created the possibility for educators to employ more social constructivist techniques (Henning & Van der Westhuizen 2004, Duguid & Brown 2001, Säljö 1999, Cole 1996, Nardi 1996, Cole & Engeström 1993, Perkins 1993, Lave & Wenger 1991, Wertsch 1991, Lave 1988). As Stevens (2005:8) points out: "Eventually chat tools will be integrated with daily life, as in the telephone, but at the moment their use in education is misunderstood, their potential as powerful learning tools nowhere near fully realised," and he goes on to list the following tools, many of which have only become available since the onset of this research.

Asynchronous CMC (computer-mediated communication) Tools:

Yahoo Groups – http://www.yahoogroups.com

Moodle – http://www.moodle.com

Blackboard – http://www.blackboard.com

Nicenet – http://www.nicenet.net

Global Educator's Network – http://vu.cs.sfu.ca/vu/tlnce/PublicReg/PR_Register.cgi

Wimba – http://www.wimba.com

Web Presence

Blogs

Wikki

Synchronous CMC (computer-mediated communication) Tools:

Tapped-In – http://www.tappedin.org

Yahoo Messenger – http://messenger.yahoo.com/messenger/download/index.html, and other instant messengers

Netmeeting – http://microsoft.com/windows/netmeeting

iVisit – http://www.ivisit.com

Pal Talk – http://www.paltalk.com

Alado – voice portal (for Webheads) http://www.alado.net

Learning Times – http://www.learningtimes.net

The literature debates how effective the web is as a tool for creating the conditions required for maximising learning and effective collaborative learning. The use of the web to exploit the benefits of collaborative learning has been noted in a number of case studies by participants (Smith & Gunderson 2000, Kamhi-Stein 2000), instructors (Goodwin et al. 2001, Greening 1998, Foley & Schuck 1998, McInerney 2001) and designers (Draves 2000, Gray 1998) as have the inherent difficulties in web based collaboration (Schrum 1995, Pearson 1999). There is a clear distinction in the literature between those authors who focus on the benefits of this medium, in some cases focusing on the technology to the detriment of pedagogy, and those authors who focus on warning us against allowing the 'halo' effect that may blind us to the restrictions web delivery poses.

Hong et al. (2001:223) claim that "the Internet is reorganising our approaches to education and altering communication patterns in society, affecting our educational system". Whilst there is clearly an element of truth in this, Hara & Kling (2000:4)

warn that "the expectations for technology to transform higher education are disproportionately high".

Some of the more vocal proponents of web training suggest that "we will learn more, better, faster and more enjoyably" (Draves 2000:17), that "there is more equality of participation in CMC (Computer Mediated Conferencing) than in face to face group interaction" (Hiltz & Wellman 1997:45) and that online learning communities in teacher education have an impact on professional practice that goes "well beyond what is possible in specific training events" (Salmon 2000:45). However, voices of reason remind us that many trainees are not as computer literate as the web designers and deliverers and become frustrated or are uneasy about entering web-based discourse on chat or email forums (Horton 2000, Pearson 1999, Bennett et al 1999), and they warn against over-enthusiasm (Bates 1994, Clark 1994). The most balanced views accept the power of the medium whilst cautioning against thinking it is the answer to all our educational needs and stressing the importance of the roles of the developer and deliverer (Winiecki 1999, Beer 2000, Wegerif 1998).

Some recent classroom-based studies have looked at the aspects of good teaching that promote deep learning (Entwistle 2000) and how these relate to Entwistle and Marton's (1994) concept of a knowledge object as a direct experience of understanding. This concept ties in with Streibel's assertion that not "all knowledges about a situation have equal value at all times" (1994:16), but the term 'object' is still sometimes used in a behaviorist sense. As teacher educators and developers it is essential that we continue to respond to this moving foundation of understanding. There have been a number of studies that have attempted to look at and define the

knowledge objects required in teacher education (Bloom 1956, Valette 1971, Stern 1980), and their approaches mirror recent work on knowledge management, and knowledge engineering, which sees knowledge objects as the smallest unit of meaning that can be understood (Rosenberg 2001). However, this can also be seen as a step backwards to knowledge transmission theories driven not by the latest work in knowledge theory but by the fiscal and marketing concerns dominating the development of many training websites today.

Many recent studies have looked at how the latest delivery mediums of CBT (Computer Based Training – also referred to in the literature as ICT, Information and Communication Technology) can be incorporated into social constructivist views of knowledge. Many authors and projects argue that the mediums are perfect for promoting social interaction and the collaborative construction of knowledge through well maintained knowledge portals (Stacey 2001, Rosenberg 2001). Others have focused on how bulletin board use and computer-mediated conferencing (CMC) tools can best be utilised to promote Vygotsky's "higher level thinking" (Bunker & Ellis 2001:1) and to encourage knowledge development through collaboration (Kamhi-Stein 2000, Foley & Schuck 1998, McInerney 2001, Greening 1998). CMC itself does not create social interaction (Preece 2000), and the e-moderator needs to create an atmosphere that enables 'meaning making' (Salmon 2000). Further case studies on CMC teaching and learning are made available by Salmon on the Open University site at http://oubs.open.ac.uk/e-moderating. What is evident from all these case studies is that the technology can be used to promote learning, but we need to take in all the views posed above and build them into our site design and maintenance if web based education and support is to be truly effective.

Several authors have given us models and principles to follow if we wish to ensure our educational web site development maintains this effectiveness. For example, Webster & Hackley's (1997) nine hypotheses for effective use, Salmon's (2000) five-stage model and Campbell's (1999) six conceptual frameworks. These models tend to focus on practical features or requirements drawn from web training principles, and all of them stress the importance of focusing on the audience. The models indicate how web training has followed a similar trajectory to the development of knowledge and teacher education described earlier in the chapter.

"By late 1999, Web-Based Training was clearly walking on its own. Some would say sprinting" (Horton 2000). There are thousands of training and educational sites available on the web covering a vast array of different subject matter. There are many web sites from universities all over the world which allow teachers to take their full Masters programmes online. I list the following four as examples from four different countries, as Draves (2000) in his book on on-line learning and Beer (2000) in her valuable guide to building learning environments point out, we can now study virtually anything via the web from literally thousands of different institutions. Draves' own online institution (LERN at http://www.lern.org) has 4,000 members in 15 countries. In teacher education, Lancaster University in England has three Masters in Networked Learning, Advanced Learning Technology and Multimedia Courseware Engineering (http://cssalt.lancs.ac.uk/alt/altprog.htm). Curtin University in Australia has a Masters in Science Education with a strong focus on Learning Technology (http://learnt.smec.curtin.edu.au). Athabasca University in Canada offers a Masters in Distance Education (http://cde.athabascau.ca). The University of California, Berkeley Extension offered "more than 50 online courses on topics as diverse as Shakespeare

and earthquakes" in April 2001 (Kleiner 2001). By 2007, almost half of all United States university and college students will take some courses through distance education technologies (Kascus 1997). Other universities offer resource pages to their students. One popular example is Fred Riley's site at Hull University - http://www.hull.ac.uk/cti/langsite (now hosted at: http://www.fredriley.org.uk/call/). These university sites are devoted to the delivery of their course materials or providing a list of interesting links based on what the teacher educator has at hand and not, as far as I can tell, based on any participant input.

In ELT, there is also a multitude of other resource web-sites from Dave Sperling's famous ESL cafe (http://eslcafe.com), ED's Oasis (http://www.EdsOasis.org) and IATEFL's Teacher Development SIG site (http://web.jet.es/baskat) to support sites from institutes like Pilgrims (http://www.pilgrims.co.uk) and ELT publishers like MacMillan's http://www.onestopenglish.com/ProfessionalSupport. All these sites are generalist in nature and aimed at capturing the widest possible audience.

As the web evaluation models referred to above describe, good educational web design practice is seen where the audience, not the designer, controls what is referred to and what is ignored (Campbell 1999). After years of trawling the net and following every possible lead I could find, there are almost no TESOL web resources that I have discovered which aim at building a site based on a specific group of users. This surprised me as most TESOL research relies on the input of teachers as Burton (1998:419) confirms when she says that, "teachers are central contributors in any reflective process on TESOL research". Although there are certainly more, the three exceptions to this lack of teacher input into a web resource that I have discovered are

the AMEP (Adult Migrant English Program) 'Professional Connections' site (http://www.nceltr.mq.edu.au/pdamep), the US Department of Education ESL/CivicsLink (http://www.pbs.org/ literacy/esl/esl.html) and the ELT Forum (http://eltforum.com). The AMEP site is aimed at helping teachers on the program share their experiences in classrooms across Australia and working towards a consistent professional development program for those teachers (Hyde 2000). The ESL/CivicsLink site aims to create a national electronic staff development system for ESL teachers and programs (Russell & Sabatini 2001). The ELT Forum is a site that aims to help teachers develop their classroom practices through guided reading and research. The first two of these sites are based on in-service professional development, and the latter is an open-ended web site that aims to awaken teachers' research interests.

To date therefore, my research has failed to bring to light a website with the same aim as the website I have developed as a vehicle for this research. In other words, a website that is developed based upon the input of its end-users who are EFL / ESL teachers studying for further degrees, and a website which aims to promote further reflection and provide support for those teachers as they take their own research beyond the realms of their degree course. However, as I have noted above, the sheer scope and speed of change in technology and the web today means that another researcher could discover a similar site tomorrow.

The website developed at the core of this research aims to address all areas of the model of teacher knowledge put forward in this chapter as well as providing teachers with the support they require. Based on the literature and the model of teacher

knowledge above, a series of pedagogical principles for website development are drawn up in the following section.

2.5. A composite theory: Principles of teacher knowledge development informing statements of practical advice for website development

The previous sections discussed teacher knowledge at the epistemological level, but as noted this research aims to drive procedural knowledge forward. Therefore, this section suggests practical pedagogical principles for website development. These principles are then used as the basis for statements of practical advice in the development of teacher support sites.

These common principles and statements of advice are then followed in the development of the website detailed in this research. "The language of 'principles' is intended to emphasize that teaching practice is tightly linked with knowledge and interpretative frameworks" (Cochran-Smith 1999:118), and the aim is to provide educational web developers with a set of common principles based on sound theory with practical applicability.

The model of teacher knowledge is reproduced again here for easy reference against the principles.

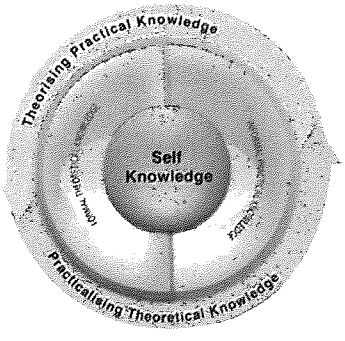


Figure 2-7: Model of teacher knowledge development – the first cycle

Based upon the literature review and the model above, the following principles of teacher knowledge development are proposed:

1. Teachers are active processors of the knowledge, facts and information they receive, in line with cognitivist and constructivist theories.
2. Teachers reflect on new knowledge and either adapt this to their existing knowledge structures or adapt their existing knowledge structures in light of this newly received knowledge. This is supported by constructivist theories and the reflective model.
3. Teachers question and discuss the change process with a 'knower' and / or others in order to adapt and confirm their changing knowledge structures. This is in line with the interpersonal development model.
4. Teachers actively research, test and examine their reformed knowledge structure in different situations both individually and in collaboration with others. This is a refinement of the 'practicalising of theoretical knowledge' definition using an action research approach.
5. Teachers share their reformed knowledge structure as it takes shape, thereby becoming initiators. This brings together the publication and institutionalization of knowledge discussed above with the reporting stage of action research and the recent literature on teacher narratives.
6. Teachers as both knowledge recipients and knowledge initiators work in tandem to extend and deepen their newly formed knowledge structures. This discussion extends from principle three above to fully incorporate the full cycle of the teacher model with social constructivist theories.

The six principles together act as a description of the full model of teacher knowledge development, bringing out the continual cycle created through the theorising of practical knowledge and the practicalising of theoretical knowledge. These six principles then allow us to posit the following statements of practical advice for the development of educational support sites:

From Principle One (to ensure active engagement and hence meaningful learning):

1. Build the site map content from the needs of the end users.
2. Extend the site with new pages and links based on user requests.

From Principle Two:

3. Build questions and exercises that encourage reflection and the questioning of recipients' existing knowledge structures.
4. Build specific pages on reflection into the website.

From Principles Three & Six (allowing contact with a 'knower'):

5. Ensure there are multiple possibilities to contact the developer and trainer with ease.
6. Ensure that all requests and contacts are responded to accurately, honestly and quickly.

From Principles Four & Six (allowing contact with peers):

7. Enable users to communicate with others and collaborate with each other using features such as bulletin boards and discussion groups.

From Principles Five & Six:

8. Post bulletin boards and discussion groups only on requested areas through links at the end of content pages.
9. Give users the opportunity to post their own pages and thoughts, so they become initiators and a full cycle of knowledge is created.

This research aims to evaluate and test these principles and statements of advice through the case study described in Chapter 4. The next chapter first details the methodology undertaken, and demonstrates how the analysis and interpretation will inform the review of the principles proposed here from the literature review.

Chapter 3 – The Methodology:
A Natural History of a Research Study

> "A methodology defines how one will go about studying any phenomenon. In social research, methodologies may be defined very broadly (e.g. qualitative or quantitative) or more narrowly (e.g. grounded theory or conversation analysis). Like theories, methodologies cannot be true or false, only more or less useful".
>
> (Silverman 2000: 79)

This chapter describes the philosophies, theories and methods behind this research. The overriding philosophy is comparable to Lakatos' (1970) hard core of basic theoretical assumptions which do not change; the negative heuristics. These are the assumptions which are not questioned in this research, and they are at the core of my research beliefs as detailed below in Section 1.

3.1 Overriding philosophy

Two quotes from qualitative research literature give guidance towards my overriding philosophy, and I will use them here in the introduction to this section to frame the discussion below that goes into more detail on my beliefs, approach and methodologies.

"Hermeneutics then offers a vision of the academic project as always incomplete and uncertain, responding to new questions and problems in the quest for sense" (Stevenson 2000: 23). Even after five year's of research, there is a sense of much more to do, and Chapter 8 demonstrates the years of work I foresee in front of me.

Webb (2000) draws from Habermas (1990) when she argues that knowledge is "partial and bounded by different perspectives". In other words, there is no one correct truth, but always different interpretations from different angles dependent on the individual and everything they bring to the moment. From a methodological standpoint, this means that the researcher must adopt a multi-faceted approach using as many data sources as possible and then analyse and interpret the data from as many perspectives as possible. Only then can a valuable picture be arrived at.

3.1.1. Qualitative

This research was primarily qualitative in nature, and this section discusses the methodological principles and beliefs that have governed me and guided my work since the early 1990s. Wolcott (1990:26) asserts that "there is no longer a call for each researcher to discover and defend" qualitative research methodologies, and he is supported in this claim by Silverman (1997:1), who argues that "qualitative studies have already assembled a usable, cumulative body of knowledge". However, I have decided to 'discover and defend' my research methodologies, because I agree with Edge & Richards (1998:339) when they dispute the validity of Wolcott's statement saying, "he is not describing a situation we recognise in TESOL". A decade ago Davis (1995: 427) wrote "a great deal of debate, misunderstanding and confusion currently surrounds the use of qualitative research methods in applied linguistics", and this, I believe, mirrors the situation in TESOL today.

My research beliefs meet the five preferences of qualitative researchers (Silverman 2000:8) in that I have a preference for the qualitative data of words and images, for naturally occurring, unstructured and observed data, for meanings, and for inductive hypothesis generating research. The final belief that I adhere to is the rejection of natural science methods as I do not accept that a laboratory experiment can produce a hard and fast law for teaching and learning.

Holliday (2002:6) suggests that qualitative research differs from quantitative research in eleven basic ways brought under four categories – activities, beliefs, steps and rigour. I use these to show why this research was qualitative in its approach.

Activity 1: The research looks deep into the quality of social life.

This research took a long term case study approach by developing a website to support teachers doing further study based upon the needs of those teachers. It then explored in depth how they used the website and how the website developed around their needs to produce a series of principles, statements of advice and keys for future website developers.

Activity 2: The research locates the study within a setting which provides opportunities for exploring all the variables within manageable boundaries.

I was committed to studying how teachers access and react to this website without contriving, manipulating or artificially fashioning the setting (Schwandt 2001). The case study was set within the boundaries of one self-selected group of participants, who used

the web site that was developed around their needs. The data analysed consisted of email exchanges, discussion board contributions and site user feedback collected over two years, which gave me the opportunity to explore a multitude of variables from different perspectives. By using this data, I ensured I was able to meet a "particular strength of qualitative research... its ability to focus on actual practice in situ" (Silverman 2000:283).

Activity 3: The initial research leads to more informed exploration as themes emerge.

This thesis aims to capture the excitement of the emergence of new, unexpected themes throughout the research. The literature review is one of informed principle setting, with those principles then tested and adapted as new themes emerged during the data analysis and the website development. The thesis details how the initial research led to the exploration of the data with its emerging themes (e.g. the keys to effective web facilitation in Chapter 6).

Belief 1: The researcher holds the conviction that what is important will emerge.

This conviction is one that should be evident in my writing throughout this thesis but, more importantly, is demonstrated through my use of the research journal and theory memos (see Data Type 5 in Section 2.8 below) as valid methodological data.

Belief 2: The researcher has confidence in their ability to devise procedures to fit the situation as it changes.

It is difficult to demonstrate confidence, but I never doubted through the ups and downs, which are part of the researcher's roller-coaster, my ability to work towards the most appropriate procedures. Extracts used in the thesis from the theory memos and the research journal give examples of that confidence.

Belief 3: The researcher must submit to and interpret the unexpected in reality

The best example of how I submitted to the unexpected is the inclusion of the knowledge-user category (see Chapter 5, Section 3), and the emergence of the keys to effective web facilitation (see Chapter 6, Section 2). Neither of these were expected but emerged as the analysis and interpretation progressed.

Step 1: The researcher decides that the subject is interesting.

The introduction (Chapter 1) demonstrates how interesting I find this subject. After five years working in detail on the area, I am still excited by the advances we are making in our understanding of teacher knowledge as well as in the potential of the web as a tool that can facilitate the development of teacher knowledge.

Step 2: The researcher explores the subject.

My conviction in the possibility of developing a teacher development website that could support teachers in a new, more immediate way led to the reading and research detailed in the literature review. These in turn led to the website becoming a reality and further reading and research with the exploration continuing. The depth of the exploration is

detailed in Chapters 4, 5 and 6. I see this exploration less as a step and more as a cyclical experience that has continued unabated for the last five years.

Step 3: The researcher lets focus and themes emerge.

I let the research take me naturally to where it led me rather than try and predetermine the path it should follow. The focus (hypothesis) emerged, and was narrowed in its scope, as the research progressed. The emergence of new themes and how they led to revised principles is detailed in the coming chapters. An example of this is the inclusion of the knowledge-user category (see Chapter 5) and the nine keys to effective web facilitation as detailed in Chapter 6. Chapters 4, 5 & 6 demonstrate an 'emergent theory' developing through the research experience and based upon the understanding that emerged after reflection on that experience. The differences between the model, principles and statements of advice from their tentative introduction after the literature review and their final format in Chapter 6 is a clear indication of how focus and themes emerged unexpectedly during the research. I should also add that the 'final format' is only final in terms of this thesis. There will no doubt be many changes ahead as further research builds upon this beginning.

Step 4: The researcher devises research instruments during the process.

Section 2 below details how the data types, the choice of analysis and the development of the coding format were arrived at.

Rigour 1: The researcher adheres to a principled development of the research strategy.

This chapter describes the principled development of the research strategy. Through careful selection of data and methods of analysis and the informed development of instruments, I aim to avoid the "piecemeal adoption" of methods so "rife in qualitative research" (Bartlett & Payne 1997:181). Chapter 7 then evaluates the methodology undertaken from four perspectives to ensure that the research has adhered to the most stringent of qualitative research standards.

By taking this considered response to Holliday's paradigm, I have intended to demonstrate clearly the overriding qualitative philosophy that supports this research as well as its "systematic if not what is classically regarded as 'scientific'" (Holdaway 2000: 166) approach.

3.1.2. Case study

The use of the website as the vehicle of the research and the focus on a restricted group of website users mean that the research fits the "bounded system" definition of case study proposed by Stake (1994:236). Although Hammersley (1992) suggests that the ability to generalise from a single case study is dependent on its comparison with other cases in a larger sample, this research follows the argument that "universal principles become understandable only in light of specific cases" (Schwandt 2001:xxxi). The importance of case studies aiming to generalise in some way has been powerfully argued by Mason (1996:6), but I also believe that case studies are equally important in the ways in which

they can contribute to the development of knowledge in a professional domain. The editor of the Case Studies in TESOL Practice Series supports this position, "informative by nature they (case studies) can provide an initial database for further, sustained research" and because of the detail with which cases are described other professionals can "compare the cases with and evaluate them against their own circumstances" (Burton in Johnson 2000: v). The power of the case study is not in the ability of the researcher to generalize from it but in the ability of others to draw similarities from it to their own contexts and build upon the research. Hence, my focus is not on the need to generalise and be "drawn away from features important for understanding the case itself" (Stake 1994:238); it is to focus on the situation being explored in depth that will allow me to develop principles that can be tried and tested in other situations in further research.

3.1.3. The qualitative description of intervention

Although this thesis is clearly a descriptive and interpretative account of the research, the interventionist nature of my researcher role played a major part in my thinking throughout the five years.

As noted above, my overall research philosophy is a qualitative one and the thesis is grounded in an interpretative paradigm. However, the descriptive account of the case study (Chapter 4) highlights a number of decision points in the development of the website, which should be transparently viewed as interventionist in the sense of action research where the researcher "acts in and on a situation" (Altrichter et al 1993:4). This section discusses openly this apparent paradox with the aim of clarifying that I believe in

"a new 'epistemology of insiderness' that sees life and work as intertwined" (Reinharz 1992: 260) and accepts that any 'insider' research cannot avoid intervention. The key is not to ignore that intervention but to describe it openly as I am doing here. In this way, I remain true to the qualitative principles laid out earlier in this chapter.

My guiding philosophy in the writing up of this thesis was descriptive, using as wide a variety of data sources as possible (see Section 2.8 below) including my own research journal and theory memos. The aim was to describe what was occurring and emerging whilst remaining alert to and recording the influences that I had. I do not see descriptive research as making "no attempt to explore or explain" (Burton 2000:295). The strength of presenting research as a descriptive study in narrative form is detailed in Silverman (2000:34-36) who sees the narrative as a powerful tool in reporting research just as Bruner (1990) sees our identities primarily organised in narrative form. Whilst the final product is not truly narrative in its make up, the thesis holds true to the principles behind the writing of narrative.

A narrative is a linguistic structure that gives form to the meanings we construct (Russell & Wandrei 1996). In this sense, the whole of this thesis is a narrative, and I have tried to be guided by narrative principles throughout. This thesis attempts to follow the principles of Todorov (1990:27-38) by taking the reader on a linear path from the outset of the research and the recognition of principles from the literature through the struggle to determine appropriate methods and the emerging clarity of the analysis to the interpretation and reformulation of those principles. Although it proved unworkable to

maintain the narrative sequencing originally aimed at in the case study chapter, these narrative principles have greatly influenced my writing.

My role as developer could not avoid being interventionist in nature, and I give examples below of the decisions behind why some pages were uploaded or not, and it could be argued that this research matched the ideals of action research by being a "study of a social situation with a view to improving the quality of action in it" (Elliott 1991:69). There is no doubt in my mind that this is one aim of the research as I was always aiming to provide a service to teachers doing further studies.

Chapter 4 is a description of the development of the website and the research. Whilst the aim of the site was to respond to the needs of the users, the decisions on which suggestions to pursue were often based on factors that were far from descriptive. Examples indicative of those which were easy to respond to would include, "Here's a useful site. Upload it to the site". However, other suggestions were more complicated technically and, I decided, also fell outside the remit of the site. A good example of this was the suggestion to include on the site a database of books that users wanted to sell. I did not follow up on this suggestion, because I felt other sites (for example, Amazon and E-bay) could provide this service more effectively. Another example was the constant request for the posting of assignments. This produced lively discussion with some participants in favour and others against. Those in favour felt it would help them understand the formatting and standard required. Those against thought that the guidelines provided were sufficient and worried about how models might influence their

work. I was concerned that this was not in the remit for the site and was a decision that should be taken by Aston. The University agreed and, in independent discussions with participants, decided to post sample assignments on their website. They then gave me permission to link into those samples from philseflsupport.com. A third example of the interventionist nature of the developer's role was the decision to email focus group users every time the website was updated. These three examples are clearly evidence that the website developer role is an active and interventionist one.

Nevertheless, the main focus of the research is not the simple provision of a website tool. I would therefore claim that, while it is not to be ignored, the interventionist nature of the developer role is one that impacts on the website as a vehicle of the research and not on the interpretative and qualitative nature of the thesis itself.

3.2 Methodological detail

This section describes the methods used in this research as I aim to draw a clear picture for the reader of the processes I followed in determining the research strategy. I begin with the narrowing of the research to one focus group and the importance of language. I then break down the process I followed in finalizing the research strategy into four phases: the need to segment and categorise the large volume of data; my search for a method of analysis; the development of coding questions; and the model of language analysis used within the coding procedure. I use brief extracts from the data on knowledge-seeker (Chapter 5, Section 1) in order to exemplify and clarify the process.

Finally, I examine how I involved the website users in feedback on the analysis before detailing all the data types used in the research.

3.2.1. Focus group

> "The use of focus groups in social science research is a relatively new phenomenon", (Burton 2000:153) but "their value lies in the opportunity to analyse the interaction between participants" (Oates 2000:187).

I did not intend initially to narrow the study down to a specific group of users, but I did consider the benefits of this approach in August, 2001 (Journal entry of August 16th) having read Silverman's kitchen sink criticism of new researchers (2000:63). Then, in January 2002, with nearly 100 actively responding users to the site from a wide variety of backgrounds, locations and study situations, I had to admit that a focus group was necessary if the research was to have a manageable volume of data. Therefore, as noted in Chapter 1 (Page 13), I narrowed the research to one focus group of teachers who were studying for the Aston University MSc in TESOL/TESP and decided I would develop the site based solely upon their feedback. I settled on this group of teachers, because the most detailed and frequent first year feedback came from them and, by narrowing the research in this way, I could build a connection between the input to the site, in terms of user emails and requests on the one hand, and the knowledge sought on the other. This also enabled me to see how one may be related to the other. Finally, the focus on one group allowed more intensive contact to a smaller group of interested teachers which in turn

allowed me to understand the effect of my responses and the extent of their interventionist nature.

This section has given a necessarily brief description of how one focus group was chosen for the purposes of this research and the advantages of narrowing the research scope in this way. Full details of the group, as well as how I kept track of the other users, is given in the section on groups in Chapter 4.

3.2.2. The importance of language.

Having settled upon one focus group, I now had to decide how I could analyse their site input in order to better understand how this reflected the knowledge they sought, and devise a method of analysis that would inform the principles suggested at the end of Chapter 2.

As noted in Section 1.1 above, qualitative research presumes a preference for the data of words and images (Silverman 2000, Hammersley 1992) believing that language can provide us with the clearest insights into individual knowledge and its place in the social sphere (Richards & Schmidt 1983, Miller 1997). Given this assumption about the centrality of language, discourse analysis (Brown & Yule 1983, McCarthy 1991) should provide us with a method to understand the knowledge development being displayed by the language of the site users in the focus group. The analysis of discourse has been widely used to investigate theories of learning and knowledge construction (Hmelo-Silver 2003, Wetherell et al 2001, Titscher et al 2000, Engeström 1999, Palincsar 1998, Cole

1996, Pea 1993), and the rest of the section now details how I arrived at the specific method of analysis finally used in this research.

3.2.3. The need to segment and categorise

Once I had determined the centrality of language in this research and decided to focus on Group One (Course Participants on the Aston University MSc TESOL / TESP distance learning degree), the primacy of email and discussion board exchanges was established. In other words, in order to examine the use of the website by teachers and how this related to their knowledge development and the principles proposed at the end of Chapter 2, I decided to analyse the relationships realised in language. Therefore, it is to the data of emails and discussion boards that I turned.

As is described in more detail in Chapter 4, Section 3, it took me some time to settle on a standard process for the data collection of emails. The process finally settled upon focused on simplicity and still ensured nothing was lost in the collection procedure. Every time I received and opened an email, I copied and pasted it into a Word document created specifically for that user. If the user had not emailed me before, I created a new Word document for them. I also copied and pasted my responses to each user into the same document. This simple process, therefore, allowed me to develop a transparent and effective database of users as well as maintaining an accurate record of all email exchanges with each individual user of the website. The discussion board data was saved on the provider's server, and I then copied and pasted the discussions into Word for later analysis.

By saving all the email exchanges in this way, I did indeed produce a mass of data that stretched to some hundreds of pages. As Stroh (2000:210) points out: "It must be realized that qualitative methodologies produce a mass of data ... (which needs) to be sorted and managed into what is useful for the project being undertaken. ... This process needs to be well planned to ensure rigour and reliability". Faced with this volume of data, I therefore had to find a way to break it all down into a manageable and analyzable size.

In order to do this, I decided to follow a two-step procedure of segmentation and categorisation taken from articles describing email and internet research in educational settings (van der Meij 2002, Williams & Meredith 1996). Van der Meij (2002) provides a basic framework to start the analysis of email data through the division of emails into meaningful units called segments, and this approach was adopted as a first step. However, his categorisation of segments did not match the aims of this research, so I still needed to find a coding structure, which would provide me with a categorisation that allowed me to explore the use of the site and how this could be linked to the principles developed in the literature review. I noted during the early stages of the analysis that I appeared to have "a subconscious method for going through emails received and responding to each paragraph / segment in turn. This has made the segmentation quite easy if not the categorisation" (Email to tutor, 17th May, 2003). The chapter now continues by describing my search for a discourse analysis method which would provide me with that coding structure and system of categorisation.

3.2.4. Choice of method

This section describes my exploration of a wide range of methods of data analysis and how I finally settled upon the development of one instrument for the analysis of the email and discussion board data. Using Titscher et al (2000) and Wetherell et al (2001), I looked at fifteen methods of discourse analysis comparing each of the methods to my data. The following notes draw directly from my research journal written as I did this comparison.

Method 1 - Content Analysis

While this method appealed in its approach to the categorisation of data, the need to fix categories firmly before the analysis began was not consistent with my view that the categories should emerge from the data. Due to this inconsistency with my beliefs and the needs of the research to allow categories to emerge, I discarded this method quickly.

Method 2 - Ethnographic Methods

While the philosophy behind the ethnography of communication in trying to better understand discourse in context paralleled my research goals, as did the role of the researcher, "the low value it places on linguistic categories" (Titscher et al. 2000:100) "sits less well with my experience of segmentation to date where lexical and syntactical (especially question forms) patterns appear to play an important role. Nevertheless, this is an approach I can keep in mind unless something more appropriate emerges" (Research Journal, July 2003).

Method 3 - Membership Categorization Device Analysis - Ethnomethodology

I dismissed this approach fairly rapidly as the focus on non-authentic text and small, textual units was very difficult to apply to the email exchanges and large bodies of data involved in my research.

Method 4 - Discursive Action Model

This approach was very similar to my overriding philosophy, and its knowledge connections to my research created an immediate appeal. However, the actual approach to the analysis of the data was very specific, and the Action, Fact, Accountability sequence did not match the initial segmentation I did on the data from User 1.01.

Method 5 - Narrative Semiotics

This approach was definitely not appropriate as it focused exclusively on narrative texts. However, it did have methodological elements - such as the use of a restricted sample to build an initial model which is then tested against the rest of the data and the breaking down of the text (data) into segments - that appealed and were worth considering and building into my approach.

Method 6 - Functional Pragmatics

Whilst initially raising my interest with its focus on speech actions and patterns, the complexity of the model with its deep and surface structures (structures I was not at all convinced I agreed with) and its sweeping objective to improve social practice through

scientific means (Brűnner & Becker-Mrotzek 1992) resulted in my rejecting the use of this model and approach to analysis.

Method 7 - Distinction Theory Approach

This approach was not applicable at all due to its sentence level focus and its objective of finding blind spots in speakers' observations. Nevertheless, the clarity of procedure and theory was enviable and one I aimed to emulate.

Method 8 - Objective Hermeneutics

This was an interesting approach whose use of sequential and then detailed analysis intuitively appealed. However, the eight levels of interpretation (Oevermann et al 1979) were not aligned with my research needs. So, although I used the principles behind the procedure of sequentially analysing the data in detail and then doing further analysis to confirm the initial segments' analysis, there was no clear practical applicability to my data.

Method 9 - Symlog

This was a software model which focused on the interaction of small groups and could only have been applied to my largely two-participant exchanges with a great deal of work and technical ability to adapt the software. Even then I could not be sure the result would match my needs.

Method 10 - Critical Discourse Analysis (CDA) and Discourse Historical Method

These two approaches to discourse analysis definitely did not fit my research with their focus on social problems as a starting point and power and –isms as the background to the analysis. I quickly discarded these two approaches.

Method 11 - Critical Discursive Psychology

This approach definitely did not match my research needs given its focus on the psychology of users and their views of masculinity. There was, however, a nice reminder that discourse analysis is not a matter of following rules and recipes (Wetherell & Potter 1988:177).

Method 12 - Foucauldian (Discourse) Genealogical Analysis

This was a methodology rather than a specific method of analysis and used Foucault's triad of power, knowledge and discourse. It was definitely not applicable to the data analysis I needed to undertake for this research although "it might provide awareness that will inform approach rather than procedural detail" (Research Journal, July 2003).

Method 13 - Corpus Analysis - Sociolinguistics

The focus on mass corpora, the use of software packages to analyse huge volumes of data and the comparison of CMC (computer-mediated communication) to other modes of communication meant that this method fell outside the realms of my research. Nevertheless, the way the method dealt with a mixture of quantitative and qualitative

analysis of the CMC data from emails and discussion groups was instinctively appealing, and there were two issues addressed that I could not ignore in my research.

The first was whether CMC was more spoken-like or written-like and how this decision affected the researcher's approach to data analysis. Yates (2000) argues that email data connects to letters and memos and therefore is more written-like, but a year later in his chapter in Wetherell et al (Yates 2001:98) he gives data examples that seem "obviously spoken-like". I agree with Johansson (1991:307-8) that "electronic mail reveals features of both speech and writing", and earlier writing by Yates (1996) that suggests email users develop their own practices dependent on the social context with the resultant discourse lying on a cline between written and spoken discourse.

The second issue was that of identity online which, while not central to my research, was clearly a communication feature that needed to be considered. Spears & Lea (1992) distinguish between personal and social identity and argue that the lack of visual clues means that the users' identity is more personal, displaying greater self-awareness. This was an issue I addressed directly with the users of the website later in the research (see Section 2.7 below).

Method 14 - Conversation Analysis - Ethnomethodology

This approach had immediate appeal for my research. The view that categories developed from the data and were not predetermined by the researcher was consistent with my beliefs and research, and I liked the prominence of speech act theory and the use of

adjacency pairs. The main problem seemed to be that Conversation Analysis focuses on 'Interaction in Talk' and 'Verbal Communication' with no examples that I could find of it being used for email exchanges. Nevertheless, its principle of finding patterns in discourse with a focus on the sequence of interaction and turns through adjacency pairs had sufficient potential for the data at hand that I decided not to reject the approach totally. The ways in which I explored this approach in more depth are detailed in the coming sections and its influence on my final language analysis model is evident.

Method 15 - Grounded Theory

Although there were reservations about using a Grounded Theory approach because of the existing principles from the literature review, this method of data analysis did match how I wanted to work with the data in both theory and practice as explained below.

"The focus is on exploration and the generation of hypotheses" (Titscher et al, 2000:76), and "Grounded Theory views itself as a methodology for generating theories on the basis of data" (Titscher et al, 2000:82). This was exactly what I wanted to do. I wanted to explore the data and see what categories emerged to help me generate principles which might or might not match those from the literature review.

Strauss & Corbin (1990) recommend intensive study of the relevant literature before the data analysis work begins, and this was clearly in line with my approach. "I must be aware and honest of how this reading may affect my analysis even though the conscious objective is to ignore it while allowing the data to generate its own principles". (Research

Journal, August 2003) This decision seems to initially fly in the face of Altrichter & Posch's claim that Grounded Theory "does not provide us with a useful orientation for teacher research" (1989:26). However, their powerfully argued stance against Grounded Theory is based upon using the approach as a theoretical justification for teacher research methodology. My choice is made based upon the search for a practical, analytical approach to the data, and, I believe, does not contradict the claims of Altrichter & Posch.

Any doubt I had about attempting a Grounded Theory approach was dispelled when I realised that many qualitative studies have used only a small part of the Grounded Theory method while claiming to proceed according to Grounded Theory principles. Most notable of these is Hammersley & Atkinson's 1995 seminal work, Ethnography: Principles in Practice, where they refer regularly to Glaser & Strauss (1967). So, I decided to try a selection of data and see if the coding procedures proposed by Strauss & Corbin (1990) worked for my analysis.

I laid out the following framework as a starting point:

1. Look for provisional concepts in the data – Open Coding (Strauss & Corbin, 1990:62. Strauss 1987:28).
2. Elaborate these provisional concepts – Axial Coding (Strauss & Corbin 1990:99. Strauss, 1987:32).
3. Develop a framework of theoretical concepts with continual reference to the indicators, comparing them and looking at similarities and differences – Selective Coding (Strauss & Corbin 1990:116).

In light of Titscher et al's comments that "... during the coding process, theory memos should be written to record the development of concepts, categories and dimensions" (2000:79), I decided to use theory memos (see Appendix 1) as the main recording device of my data analysis process. The section below draws on these theory memos to detail the development of the coding questions and how the framework above became the basis for my analysis.

3.2.5. Development of coding questions

I present here an outline of the procedures I went through in the development of my coding questions. Although the description remains abstract, I trust that it is clear. Extensive elaboration and exemplification at this stage would risk an over-emphasis on this fundamentally methodological technicality, important though it is. It would also preempt the next section, which clarifies the language analysis involved within this development. By separating the two sections in this way, I hope to have succeeded in leaving the reader with a clear understanding of the approach and the importance of language analysis by the end of the chapter.

My first analysis used the questions developed by Strauss (1987) and Strauss & Corbin (1990) and detailed in Titscher et al (2000:79-80), who divide the questions into three groups; ***open coding*** to determine provisional concepts; ***axial coding*** to elaborate on the provisional concepts; and ***selective coding*** for the development of a framework for the categorisation of the data.

My first theory memo entry (October 2003) shows I was aware of the need to "rephrase the questions required so they fit the research accurately", and I will take each group of questions in turn to demonstrate how I arrived at the final analytical tool used.

Questions for Open Coding (Provisional Concepts):

The original two questions read as below, and I noted that "the answers to these will allow categories to be elaborated before going on to the questions below" (Theory memo 1, October 2003).

1. What actually happens in the text?
2. What category does the textual passage suggest?

I took the data from users 1.01 through to 1.04 for 2002 and adjusted the questions after each analysis was complete. Having refined these questions through four sets of data analysis, the final formulation read as follows:

Open Coding –

Check what is happening in the text across the whole exchange.

1. What categories are suggested by the email segments?
2. What subcategories are evident under each category in the segments?

Rather than begin with a question, I fronted the statement bolded and italicized to ensure I did not begin any segmentation or analysis until I had read the whole exchange of

emails with a particular user. Before going onto any categorisation, I noted my first overall impressions under this statement.

Question 1 was changed to reflect that any single email could function in numerous ways. Therefore, each 'textual passage' needed to be segmented based on the primary function of that segment. These functions became the categories that emerged as I answered Question 1.

Question 2 was added so that as I analysed the segments and categorised them, I simultaneously went into greater depth for the coding. This allowed me to cross check my coding with other user exchanges at an early stage of the analysis so that I constantly reviewed the consistency of my approach.

Questions for Axial Coding (Elaboration of Provisional Concepts):

The original four questions were:

1. What are the conditions for the events comprised in the concept?
2. How can the interaction between the actors be described?
3. What strategies and tactics can be determined?
4. What are the consequences of the events?

After the four phases of analysis with the data from users 1.01-1.04, the following three questions were the ones used in the final analysis.

Axial Coding –

1. What linguistic elements determine which category a segment matches?
2. What roles can be evidenced in each category?
3. What is the result of the exchanges under each category?

Question 1 was reworked several times until I settled on this wording, which ensured I had a linguistic feature to determine the categorisation. The linguistic elements were bolded in each segment, and the lack of such an element frequently forced me back to open coding and a review of the initial categorisation. In that way this question became the key to a consistent analysis through all the user data.

The first phase of this process saw me answer the tactics and strategies question with notes on speech acts and adjacency pairs. So, since the linguistic elements also determined the tactics and strategies being employed, this question in effect encompassed Questions 1 and 3 in the original axial coding structure and explains why there are only three questions in the final version.

Question 2 was reworded to focus on the roles as distinct from the interaction, because it was clear early on that the type of interaction was determined by the roles that the users and developer adopted depending on the focus of a particular exchange. The question was therefore reworded to bring the importance of the roles to the forefront of the analysis.

Question 3 was only slightly adapted so that its wording acted as an insurance that should I arrive at a different result in a specific category, I would have to return to all the data in a specific category / sub-category. This became another key question that forced me to return to the data a number of times, and the answers to this question became the basis for the definitions used in Chapter 5.

Questions for Selective Coding (Framework Development):

The final four questions initially read as follows:

1. What is the most striking feature of the field of investigation?
2. What do I consider to be the main problem?
3. What is the central theme of the story?
4. Which phenomena are represented again and again in the data?

And the final wording arrived at was:

Selective Coding –

1. What is the most striking feature of this user's data and analysis?
2. What area needs the closest further investigation?

Make sure that the central theme actually reflects the purpose of the study

Ensure that phenomena represented again and again in the data are both considered and incorporated.

The first two selective coding questions remained largely untouched as they continued to meet the purpose of my research and allowed me to check my responses here against the

notes under the first bolded statement in open coding. I found this created a cyclical approach to the analysis with key questions here forcing me back to the previous analysis from other users.

The last two questions were reworked into statements as further flags for me to cross-reference and compare data from other exchanges and users as detailed in earlier theory memos. In effect, the statements guided me back to all the earlier theory memos to see if there was any inconsistency between this analysis and early ones.

I used the bolded, italicised statements at the beginning and the end of the coding structure to vary my response in the theory memos. Without a question to answer, I found that I stopped just answering and sat back and considered if I had truly ensured the central theme reflected my purpose and that the repeated phenomena were incorporated. It was a change in perspective that helped me look afresh at the answers to the other coding questions.

At the end of my first theory memo (October 2003), I reminded myself that "whenever a new category or framework model appears the data must be completely reviewed and analysed afresh". Having finalised the instrument of coding questions I was going to use, I went back to the 2002 data from User 1.01 and started from the beginning. I also reviewed the 2002 analysis in its entirety before starting the analysis of the 2003 data from both emails and discussion boards.

What became clear as I developed the coding questions was that whilst Grounded Theory gave me an approach to data, categories and theory, it was not a model of discourse analysis. The final instrument of coding questions and the emergent category approach of grounded theory worked well, but the description above does not demonstrate the language analysis that was the basis for the emergence of the categories. Therefore, the next section uses concrete examples from the initial data analysis to describe the model of discourse analysis settled upon. The coding instrument and the model of discourse analysis were actually developed simultaneously, but the descriptions of the two are here separated for clarity.

3.2.6. Model of language analysis

When I started the initial analysis of the first emails, I began by noting the speech act (Austin 1962, Searle 1979, Brown & Yule 1983) of each clause down the left side of the page and the feature of discourse organisation (Halliday 1973, Sinclair & Coulthard 1975, Halliday & Hasan 1976, Hoey 1983, Brown & Yule 1983, McCarthy 1991) by topic (study) or function (knowledge seeking) down the right hand side. This resulted in the following annotation for the first email from User 1.01.

Greeting	Hi Phil,	
Praising Describing problem Presenting solution Refining	[redacted]	Feedback on site Study – Aston MSc
Expressing interest Requesting	[redacted]	Seeking knowledge?
Thanking	Thanks a lot for all your support. I couldn't do this course without it!	

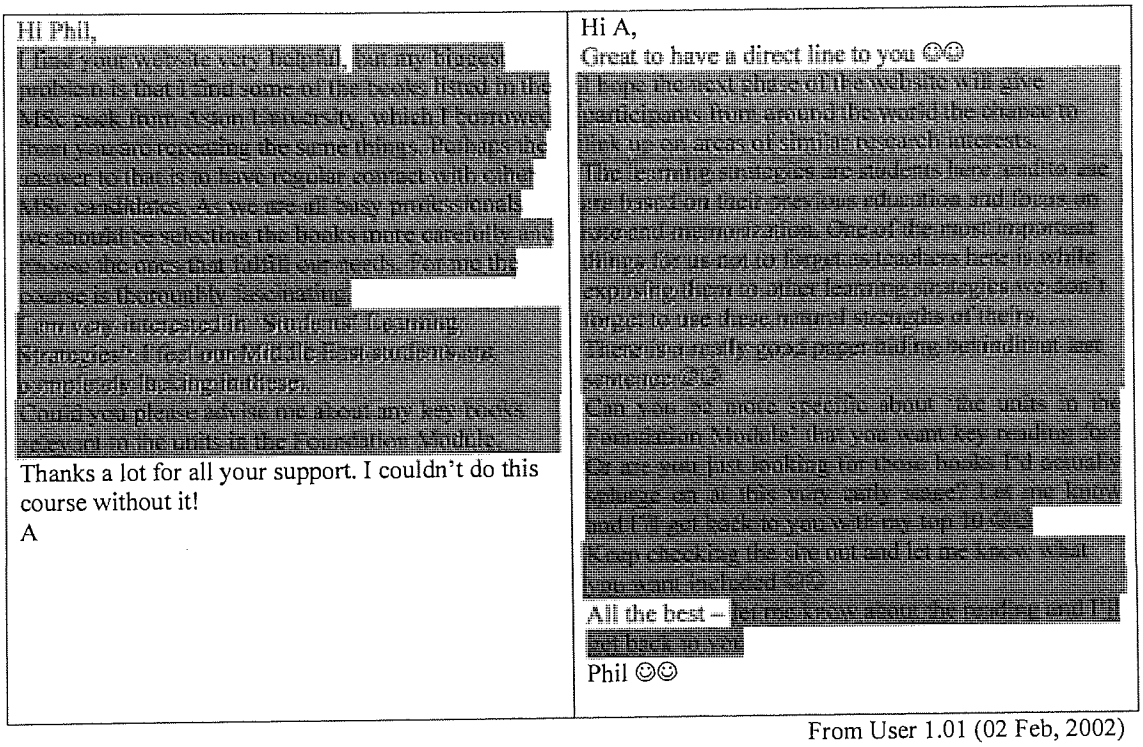
From User 1.01 (02 Feb, 2002)

This demonstrated clearly, as I noted in the previous section, that any single email could function in numerous ways. With the left hand columns taking terms from speech act theory and conversational analysis (Atkinson & Heritage 1984) as well as clause relational approaches to text analysis (Winter 1977), this first attempt also helped me realise that I could not analyse the data with such a proliferation of methods. I noted this early on in my theory memos: "The language and speech acts do not seem to be providing any set criteria for the categorisation. Repetitiveness and cross-categorisation abound where the same language appears in different categories. So, what is it that makes the segmentation and categorisation so easy? Common sense is not an answer".

I needed to segment each email based on its primary functions. Therefore, my second analysis drew on the main communicative functions (Sinclair & Coulthard 1975, McCarthy 1991) of the email resulting in the coloured highlights above, with the blue representing giving feedback on the site, the green representing seeking knowledge and the red representing introducing a topic for discussion. The primary guidance to labeling these communicative functions was my developer responses to the user emails. In order to demonstrate this, I use my response to the above email from User 1.01, and, for clarity, I have placed the two emails side by side with my response (03 Feb, 2002) in the right hand column on the next page.

These communicative functions became the categories that emerged as I answered the first open coding question to arrive at the provisional concepts. Since Chapter 5 goes into each category in detail, I will, at this stage, simply use one extract from the knowledge-

seeker category to exemplify the development of the coding instrument and method of language analysis.



Hi Phil,

Thanks a lot for all your support. I couldn't do this course without it!
A

Hi A,
Great to have a direct line to you ☺☺

Phil ☺☺

From User 1.01 (02 Feb, 2002)

The next phase of the coding instrument (axial coding) required the elaboration of these provisional concepts. As I noted above, my initial analysis saw me answer the conditions and events based upon the developer response focusing on linguistic elements. It also saw me address the tactics and strategies question with notes on speech acts and adjacency pairs. So, the two questions were combined to ensure I focused on features of language to determine which category a segment matches.

So, when I did my next analysis I bolded the linguistic elements in each segment that confirmed the communicative function as noted below.

I needed to consult you since it is the **research** time in Aston .... (gives detail of assignment) ... **Can I** write about a **case** where we solved such a problem by means of school, family and student cooperation? OR we always wanted to write a discipline policy to handle such problems more easily. **Can I** have an attempt to write such a policy?	Knowledge-seeker: Query Query

User 1.13 to Developer. (12 March, 2002)

I'd say that the **case study** to policy idea is a big one and you should check with the tutor that you're not trying to bite off too much. **You might find that** the **Case Study** and avenues of future **research** that it leads to is enough for the **assignment** ...(gives more ideas) .... **Hope this helps**. Happy to go into a lot more detail when you need it.	Knowledge-seeker: Response

Developer to User 1.13. (15 March, 2002)

Thank you once more for your support and your encouraging remarks when I felt so demoralised since I found writing **assignments** difficult.	Knowledge-seeker: Thanks

User 1.13 to Developer. (13 August, 2002)

As you can see from the example above, I used a combination of lexical cohesion (Halliday & Hasan 1976, McCarthy 1991) and turn-taking analysis (Sacks et al 1978, Levinson 1983, Brown & Yule 1983, Atkinson & Heritage 1984, McCarthy 1991) to confirm the provisional concepts. User 1.13's use of "I needed to consult you" and "Can I" are direct queries asking for specific advice. They are seeking knowledge to support their research. The end of the developer's turn with the use of "hope this helps" clearly flags the response, and the user follows up with a very belated thanks. This initial elaboration provided me with a clear language analysis model of turn-taking with an indication that three-part exchanges (Sinclair & Brazil 1982) may predominate, such as in this example with Query-Response-Thanks.

The use of lexical chains (Halliday & Hasan 1976, McCarthy 1991) allowed me to trace the topic development (Brown & Yule 1983) through the series of email exchanges and confirm the segments were linked as a category-based exchange. In the example above, the use of "research", "case", "case study" and "assignment" links the two exchanges and provides a secondary confirmation for the inclusion of the segments in this knowledge-seeker exchange.

This example demonstrates how I used the conversational analysis approach of turn-taking, supported by lexical cohesion, to elaborate and confirm the provisional categories. The initial turn provided the naming of the category, so, in this example, the user's search for knowledge gives us a category of knowledge seeking or knowledge-seeker. The discourse act of knowledge seeking sees the user acting in this way (seeking), and the person, therefore, categorised as a knowledge-seeker. This role was then confirmed by the next axial coding question (What roles can be evidenced in each category?), and the following one, which asks what the result of the exchange is. The result, in this example, was the user receiving the knowledge that he sought. This method of confirming the provisional categories, using the analysis of language, role definitions and exchange results, proved to be extremely robust (see Chapter 5), since the lack of an answer to any of these coding questions frequently forced me back to open coding and a review of the provisional categorisation.

The description above aims to give a sense of the emerging clarity that I felt, and an indication that this approach to the analysis was effective. Whilst the speech acts of

greeting, praising, requesting etc are clearly within the emails, the overriding communicative function of each email segment is best captured by a model of turn-taking, such as the three-part exchange of Query-Response-Thanks in the knowledge-seeker example.

Chapter 5 describes the analysis of the data in depth and covers all the categories that emerged. The next section now describes how I requested user feedback in order to get a fresh insider perspective on the data, and demonstrates the importance of that feedback.

3.2.7. User feedback

In order to describe the impact of the website users' feedback on the analysis, it is necessary to draw a timeline of the analysis process. The email data (see Appendix 4) was collected over two years from January 2002 to December 2003 and the discussion board data in the second year. The analysis of all the data from 2002 was completed before the end of 2003, which allowed me to get feedback on this analysis of the first year's data from the other participants in the email exchanges. Requesting the input of the other participants in the data has been seen as a form of "respondent validation" (Silverman 2000:177), but here I use their input as "another source of data and insight" (Fielding & Fielding 1986:43). Having received their feedback and input on the initial analysis at the beginning of 2004, I used their comments to inform my new analysis in 2004 of all the data.

The only Group One user of the website I met face to face during the two years of data collection was at a TESOL convention in 2003. As we discussed his relationship to the site and the way in which he used it, I noted down long-hand the questions I asked him and his replies. This transcript then provided the framework for the questionnaires (see Appendix 2) sent out at the end of 2003 once the analysis of the 2002 data was complete.

The questionnaire was divided into two parts. The first part asked the website users from Group One about their use of the site and their reasons for contacting me as the developer. It also asked for their insights on the categories developed, and I sent each of them a copy of the analysis done on the individual exchanges with them. For example, User 1.01 was sent two files: the questionnaire and the file detailing the analysis of all the emails exchanged with him. The second section of the questionnaire asked specific questions of each user based upon the exchanges with them through the year. For example, User 1.03 was asked about how the site could meet his specific needs ("One of your areas of focus over the last year has been PBL. What do you think the site needs to cover this area more effectively?"), and was asked for his feedback on an area of the site he had specifically requested ("You were one of the first users of the site that encouraged me to move on the discussion board feature. Have you visited and used the discussion boards? How do you find this feature? What else could be done to improve them?"). User 1.09 was asked to expand upon earlier feedback on the site ("In earlier emails, you have said that you found the website 'pretty far-reaching'. Can you detail specifically what you mean by 'pretty far-reaching'?").

In response to the question, "What would you say was the nature of *your* involvement in the site?" one user stated that he saw himself as a knowledge-user. He then confirmed this as he answered the specific question on the attached analysis ("In the data analysis, I am aiming to divide emails into categories of: knowledge-seeker, knowledge-discusser, knowledge-provider and user-interaction. Your thoughts? Other categories?") by providing an example from the data, and re-stating that he was primarily a knowledge-user. The data is analysed in detail in Chapter 5, Section 3, but here it is important to note that his argument convinced me to revisit the whole data and see if the knowledge-user category was in fact part of the categorisation. Although this category emerged in a different way to the other categories, I argue that it still emerged from the data. Rather than emerging from my developer's perspective, it emerged from the perspective of another insider: a user of the website.

I followed up each questionnaire response with a further series of questions asking for any clarifications, before using the user input to inform the final analysis of all the data undertaken in 2004. The reflective data on the use of the website is primarily used in the interpretation (Chapter 6), and the feedback on the data analysis is used in Chapter 5 to demonstrate with exemplification where the user input gave insights that drove the analysis forward.

3.2.8. Types of data

Whilst the research was qualitative in its overall approach, quantitative methods could not be ignored, as they were clearly applicable, for example when reviewing the number

of responses and hits to the website. This merging of quantitative and qualitative methods of analysis, and choosing the most appropriate one, follows the advice of Burton (2000:289), Lazaraton (1995:462-3), Silverman (2000:1-13), and van Lier (1988:12). However, others, most notably Fielding & Fielding (1986:12), have argued that "all methods of data collection are analysed 'qualitatively', insofar as the act of analysis is an interpretation". As stated above, I see this research as primarily qualitative, and I used the quantitative data to support the case study description (Chapter 4), the qualitative interpretation (Chapter 6) and the evaluation of the study in Chapter 7.

This section details both what counted as data and how it was collected to ensure in advance that the conditions of rigour and reliability mentioned earlier in the chapter are met. The data types are ordered based on the extent of their use in the analysis with the qualitative data listed first.

Data Type 1: Email exchanges (see Appendix 4) - The text of all user and developer emails was copied from the email programme into Word so analysis could be done using the functions available in the software. This method of data collection took some time to arrive at since originally emails were printed but not saved, and then printed and saved in email folders. This created a lot of extra work as hard copies had to be retyped into the software so that the text could be analysed. The emails were saved in folders corresponding to the groups (Data Type 8).

Data Type 2: Discussion board exchanges – The discussion board exchanges were automatically filed on the web provider's server and these exchanges could then be copied and pasted into Word for analysis. (http://www.proboards.com/index.html).

Data Type 3: Meeting notes – The notes taken during the one meeting with a user were typed up and, once confirmed by the user, used as the basis for the questionnaire.

Data Type 4: Questionnaires – In November 2003 a first questionnaire was sent out to all the focus group users. It consisted of sixteen general questions to all users and then a number of specific user questions based on their emails. Once answered, there was a follow up series of questions exploring their responses in more detail.

Data Type 5: Theory memos – The theory memos tracked my thought processes and decisions during the full analysis of the two years of data from focus Group One, and became an essential part of the analysis and interpretation chapters.

Data Type 6: The research journal – From the 14th August 2001 I kept a hard copy reflective journal which was moved onto soft copy in February 2003. The journal was used on a near-weekly basis, with some notable lapses, to record my thinking as the research progressed.

Data Type 7: Emails to tutor – All my messages to the tutor were filed in the same way as above. On re-reading this collection of five years of researcher-tutor exchanges, it is

evident that I was correct in my assumption (Email to tutor, 25th March 2002) that they would form a type of dialogic reflective journal.

The quantitative data types were:

Data Type 8: Summary of groups using the site - As teachers responded to the developer, I registered them on the site, adding their names, location and areas of interest to a database on my computer and assigned them to a group with a specific user number.

Data Type 9: Number of emails and responses - As each email and response was received, it was logged in a data sheet of responses that gave the date of the user's first communication with the developer and the number of emails sent divided into those initiated by the user and those where the user responded to the developer. The table is cross referenced to the user summary table above via the specific user number.

Data Type 10: Site reviews with number of pages and links - Before each new version of the site was launched, the number of pages and external links from the site was calculated, using a facility of the software package used to develop the website (Dreamweaver MX), and recorded in Word tables.

Data Type 11: Number of hits on site – Using a web tool, Matrixstats (http://matrixstats.com), the number of hits on the site per month was calculated and averaged using Excel spreadsheets.

Data Type 12: Number of hits per page – The Matrixstats tool above also gave a list of the most visited pages each month. This data was then transferred into Excel to show a pattern of use.

Data Type 13: Number of hits by user location – The same Matrixstats tool gave the geographical location by country of all visitors to the site. This data was also transferred to an Excel spreadsheet and compared to the locations of the active users in the summary database (Data Type 8).

Data Type 14: Discussion board registered users – One of the discussion board features was the registration of users, and this data could then be copied and pasted for inclusion in the summary group (Data Type 1).

Data Type 15: Web page photo-shots - At each launch of a new website version or when a page was fundamentally changed the print screen function was used to create photo-shots of the page. These were then copied into Word and are used as a visual representation of how the developer responded to user feedback in Chapter 4.

This list of the variety of different types of data utilized in the research, and how they were collected and used, mirrors Denzin & Lincoln's (1994:11) statement that, "there have never been so many paradigms, strategies of inquiry, or methods of analysis to draw upon and utilize". I attempted to use the most appropriate method for each line of data

enquiry, and so I saw myself deploying different methods with different types of data in line with the overriding methodological position described in this chapter.

3.3 Evaluation

Finally, the methods of validating and evaluating the research are described in detail in Chapter 7, which examines the research from a series of multiple perspectives to satisfy myself as much as the reader of the confirmability, dependability, transferability and credibility (Lincoln & Guba 1985:289-331) of the study. The chapter is divided into four main sections under each of these naturalistic inquirer criteria for the evaluation of qualitative research.

The first section of Chapter 7 evaluates the research and, in particular, the analysis and interpretation of data using Silverman's (2000) refutability principle to examine the confirmability and objectivity of the study. This is supported by taking a selection of data from the worldwide user group, who were not part of the focus group, and applying the same data analysis and interpretation methods used in the research to see if all the categories were sufficiently and accurately covered.

The second section uses four of Silverman's five inter-related methods of validating the reliability of qualitative research (2000:177-185) to explore the dependability of this study. This section therefore evaluates the research in depth against the constant comparative method, comprehensive data treatment (also covered in the penultimate

section by the Holliday evaluation procedure), deviant case analysis and, finally, appropriate tabulations.

The third section uses Holliday's (2002) criteria of rigour, depth and substantiality to evaluate the validity and transferability of the research procedure and approach under the four areas of setting, research activities, themes and foci, and data before the final section examines the credibility of the research.

The use of these distinctive evaluation techniques arose from a need to triangulate in some form or another. The exhaustive procedure means that I have great confidence in the claims that I have made and the methodological approach I have taken in this research.

3.4 Summary

This chapter has described the methodology behind the research. Chapter 5 details the analysis undertaken and Chapter 6 reports on the interpretation that creates the principles based on the analysis. These principles are then matched to those from the literature review, and the revised principles are evaluated and interpreted against both the literature and the data.

I envisaged the methodology adapting to the data and not the data adapting to some predetermined methodology. To quote P. Atkinson (1992:51), "we do not have perfect methods for data collection; we do not have perfect or transparent modes of

representation. We work in the knowledge of our limited resources. But we do not have to abandon the attempt to produce disciplined accounts of the world that are coherent, methodical, and sensible". I have continually striven throughout this research for a coherent and methodical approach under the qualitative philosophy detailed in this chapter, and the depth of the evaluation undertaken in Chapter 7 has convinced me that this research has succeeded in producing a disciplined, coherent, methodical and sensible account.

Chapter 4 – The Case Study:
The Development of a Website as a Vehicle for Research

This chapter details the development of a website to support teachers studying for diplomas or Masters in order to use it as a vehicle for research and a data generation point for the themes under analysis. These themes are essentially the development of teacher knowledge and the support of teachers doing further studies via a web medium.

Originally this chapter was written as a temporally linear narrative, but it became evident at the write-up stage that this was resulting in connections across the thesis being lost. I have therefore reorganized the sections under headings that capture the key features of the web site development as it relates to this research.

The introduction to this thesis described how I arrived at the point where my research interests converged with the need to develop a website for the support of teachers studying for diplomas or Masters degrees. This chapter now details fully the realization of that convergence and how the data that is analysed in the following chapter was generated.

4.1 Hardware and software: The technical journey

Based on my experiences over the past five years, the first consideration for any researcher aiming to use a web medium for their study must be the hardware and software on which they are going to work. I relate here the ups and numerous downs on my technical journey in order to provide a brief warning to any readers about to embark

on research that they must ensure their technical equipment and working knowledge of the software is sufficient for the task ahead.

I did not even consider the notion that computer capability could feature in my research, and I began by working on the Compaq Presario 2210 computer I had had for four years. Naturally, the work I undertook strained the capabilities of this outdated machine, and following a number of crashes, including one which wiped out a large amount of the work I had already completed, I was convinced that my whole research project was being jeopardised by this lack of hardware capability. I could no longer work on such an out-dated computer and had to replace it as soon as possible.

Even without considering the crashes, the speed of the computer slowed drastically as the site grew. Finally, in May 2002, I was able to invest in a new DELL Latitude D800 computer, with sufficient memory and speed to manage the data and software required for the next four to five years. It was an essential step and one that enabled me to progress rapidly on the development of the site before that summer. I urge anyone embarking on any web development research project to first ensure that they have adequate computer capabilities from the beginning.

My experience with software was much more positive. I decided from the very beginning to seek professional advice, and so developed the website using the software programme Dreamweaver 3 (Macromedia, Inc. 1997-99). Having had no experience in this programme I first spent about three weeks working my way through the online

instruction manual. I then took a personalised course of instruction with a computing instructor colleague who continued to give me individualised hours of advice based on the problems I faced while I was developing the site. The advantages behind this type of instruction cannot be overstated. It means that I was able to call on expert advice at short notice and the sessions were based on my own web development work.

The biggest software problem I faced was in the registration page feature which did not work due to an ODBC error with the server, and my technical knowledge was not up to this challenge. I tried getting a professional webmaster to help me out through the hosting service I use, but this feature was never fully operational. This technical stumbling block was also a salutary reminder that when launching such a site, the developer should not only ensure that they have suitable hardware from the outset but also good technical support available when required. The numerous problems with the interactivity of this page meant I eventually reverted to keeping the database on my computer and encouraging users to contact me for news on others with similar research interests. This could be seen as an advantage from the research perspective of knowing what user interaction was happening, but it was still not what had been initially hoped for. As I write, the technology has advanced enormously and there are numerous web providers who provide this service free (e.g. http://www.fasthosts.co.uk). This final point allows me to draw attention to a limitation of any computer-based research, namely that it will be, from a technological point of view, out-of-date before the research is even close to finishing. Therefore, technology can only be a tool or vehicle to be used in research and not the central feature of long-term research studies.

4.2 The website: philseflsupport.com

This section now tracks the development of the site itself and how it changed and grew in response to the feedback and input of the users.

I originally contacted forty-four colleagues and teachers who had previously taken the DELTA course which I had run, or a Masters course by distance. The initial contact simply outlined my thoughts on developing a website to support teachers doing further education based on the feedback of the teachers themselves and asked them to respond with what they would like to see in such a website. The initial response was very positive and, based on an idea from one respondent I followed this by sending the same initial contact to another sixty colleagues around the world.

In total I received fifty-seven emails which contained one hundred and nine separate suggestions and needs which I then tried to group into cohesive blocks. The site was divided into five main areas under a home page. These were Contacts, Study, Practical, Language and Learning. I then sub-divided each of these based upon the areas in the website map on the following page (Figure 4-1).

I then spent three months building the site around this website map ensuring that there was enough content and links to provide good initial support to match the needs identified by those first responses. On the 17th June 2001, a date imprinted upon my memory, the first version of the site was uploaded.

VERSION 1:			HOME - (search)						
C	LA/LE/P/S	LA/LE/P/S	LA	LE	P	S	C		
Discuss	**Biblios**	**Links**	**Lang**	**Learn**	**Practical**	**Study**	**Newslttr**	**Member**	**FAQs**
Bulletin Board	Links to publshers & bookshps	Articles sorted - full texts	Gramar - main points	Teachin mthdlgy	Lesson plans	Academic Writing	News & events	Who's who	Help line
Live Chat	Full URL & ISBN	Institutes - e.g. Aston IELTS UCLES	Phonlgy w/ phon font	Currcula design & syllabus	Activties	Effective distant learning techs	What's up with the site	Interests	Online Tech support
Invited Speakers	Brief summaries	Nat Curr etc	Lexis	Motivatn students	Free lessons	Helpful hints	What's coming	Experts	
Topic of the week	Reviews of latest book s	Latest news & events	Discorse	Tchnlgy in the classrm	Teaching practice hints	What tutors look for	Publish on-line	Full contact details	Regular q's left up
Contact the expert	Buy & sell shop	Listservs w/ details	Skills - current theory	Pop-up dfinitins	Self reflection	Timed essays on-line	Confrence news	Ex-Ss career experince - what doors opened	On-line journal
Assgnmnt critique	Link to bulletin board	Locating info -eg. libraries, ERIC, search engines	Function	Biblio links w/ reviews	Observtion evaluation types	Past q's / stats	Smiley faces page		
Support group forums	Link to biblios	Writing advice – prsntation	Synopses of main argumnts	Essential reading	Virtual classrm	Model answers exams	T. Eds noticebrd for DL	Intro yrself	
(setup interest groups)	Database of materials resources	On-line journals	Biblio links w/ reviews	Definition glossary	Definition glossary	Exmple asignmnt & template	T. interviews from diff. Learning environs		
On-line mini confs		Classrm resources	Essential reading	Synopses of main argues	Synopses of main argumnts	Dsrtatin template - at P/F & D			
Book talk		Txtbooks/Dictnries	Pop-up dfinitins	Notes on different Modules	Classroom assessment	Time org			
Video conf		Educatin mthdlgy	Definition glossary		Learner training	Self reflectin			
		Clipart			Diff. Skills & levels	Markin criteria			
		Student learning sites	Sourced reading	Sourced reading	Sourced reading	Post yr asignmt			
		Chat boards			Self reflection templates	How to read			
		Refrence dirctries refdesk .com				Praphrse - relevant sections			
		Acadmic interest				T/t for assigns			
		On-line educatin				Rsearch papers			
		Job sites career fairs				Rsearch links	Shaded = most popular ideas		

Figure 4-1: Website Map, Version 1

I then sent an email to all one hundred and seventeen names on my 'interested' list asking for constructive criticism on the site via the email links built into the site (see in red on Figure 4-2). Six responses were received within the first twenty-four hours and eighteen responses by 30th June. Based on this initial feedback I made some rapid changes based on features that many respondents disliked. These included, for example, a grammar error correction and a change in the colour scheme, which can be seen in the difference between Figures 4-2 & 4-3 that have been placed together on the following page for the contrast.

> "Hi Phil.
> I just opened it up for the first time. It may not be what you want to hear, but I find it very hard on the eyes. Red on blue is hard for these old eyes. Mustard yellow is disgusting, and once you click the 'e-mail' Phil it becomes impossible to see ... white on mustard".
>
> User 04.12 – 26/06/01

Throughout the last months of 2001, I continued to add pages to the site based on feedback from teachers and users, and in December 2001 there were a total of sixty-five pages with numerous links to other sites (See Figure 4-4).

Figure 4-2: Photo-shot of Version 1 of website

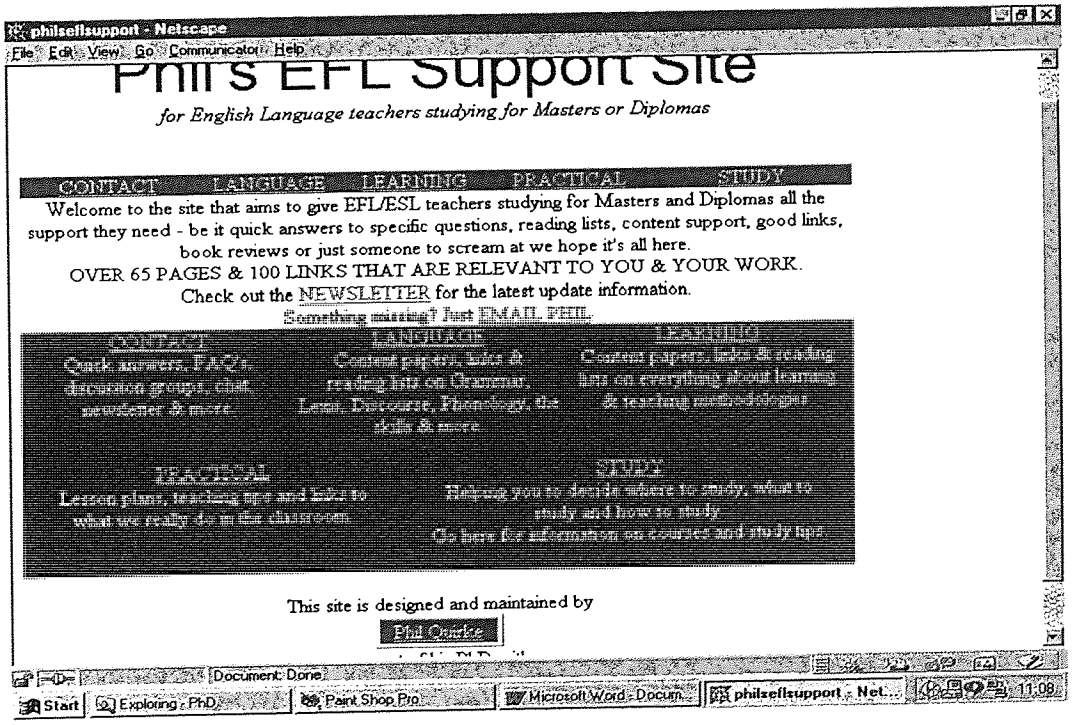


Figure 4-3: Photo-shot of Version 1b of website

STUDY						
	Aston MSc	Study plans	Time Mng.	File Org.	Great assign	Great exms
# of pages	13	0	0	1	1	0
# of links	0	4	0	0	6	0
PRACTICAL						
	Lessn plans	Tips	Links	Reflection	From T to P	
# of pages	0	0	0	4	0	
# of links	5	0	9	4	0	
LEARNING						
	Lrnin thries	Teaching	Motivation	Technology	Inde learnin	
# of pages	1	4	1	1	1	
# of links	4	5	3	11	4	
LANGUAGE						
	Grammar	Lexis	Phonology	Skills	Discourse	
# of pages	5	3	2	5	0	
# of links	8	7	5	5	3	
CONTACTS						
	Newsletter	Contacts	FAQs	Who's Who	Bulletin Brd	
# of pages	1	0	0	0	0	
# of links	15+	0	0	0	0	
TOTAL	6 Main Pages					
	21 Sub-pages					
	43 Pages = 67 total					
	83 links + newsletter					

Figure 4-4: Site review with number of pages and links (December 2001)

The links added were selected based upon how well they could address the needs and knowledge sought by the teachers accessing http://www.philseflsupport.com. An example of this is the expansion of the vocabulary page, which saw the most development at the end of 2001 in response to one participant's Masters research for the Aston MSc Lexical Studies module.

> "Continuing the dictionary theme, did you know that Cambridge have made their learner dictionaries available on-line from their website (http://dictionary.cambridge.org/)? They are the only major ELT publisher to do so - ... The Cambridge site is very learner-friendly, with a simple search page that offers a choice from their three dictionaries, plus 'dictionaries' of idioms and phrasal verbs. Maybe worth a mention on your site?"
>
> User 1.10 30/08/01

> "... Last night, I found a link to a site where the Cobuild Student's Dictionary (Inter level) is available on-line – http://www.linguistics.ruhr-uni-bochum.de/ccsd/ ...".
>
> User 1.10 03/09/01

> "I've just discovered that Longman has an on-line 'Web Dictionary' – http://www.longman-elt.com/webdictionary.html - based on LDOCE, I think. You might want to add this one to the site, along with Cambridge....."
>
> User 1.10 04/09/01

Version 1b (Figure 4-3), with its change to an all white background with blue and black fonts, received only positive feedback throughout the final months of 2001, which seemed to justify making the rapid corrections.

> "It is very informative".
>
> User 01.11 – 01/09/01

> "I've just been looking at Phil Quirke's website, which was mentioned in the current Aston Newsletter (and previously). It's brilliant! .... Highly recommended".
>
> User 01.10 – 25/07/01 – on the MSc Email Discussion list

> "Hi Phil,
> I am doing a Masters with Aston and just came across your web-site. It is very informative and hopefully a platform for us MSc'ers to get published!!!! One suggestion which may help you financially is to have job vacancies on the web-site – would be useful for people hoping to further their careers after the Masters – Don't know how viable it is!!
>
> User 01.11 – 27/08/01

The site users' suggestions and responses, and the thought behind them, indicated that the website was fulfilling a need for teachers doing further studies. At the same time, I noted in my research journal (September, 2001) that I was aiming to develop the website so that it would meet the needs of the users and allow knowledge to be processed deeply through transmission, cognition and social cognition models as described in Chapter 2.

From April to June 2002, I focused on launching a reworked site that I named 'Version 2' (See Figure 4-5 on the next page) which was based on the feedback from the new group of Aston users and tried to reflect their needs and the course they were taking in a more coherent manner. The initial feedback was very positive and although the user comments on the need for graphics were mixed, the speed of the site for all users and the number of comments about this convinced me this early to keep the site text-based. The Contacts page was dropped with the links built directly into the home page. The Learning and Practical pages were merged to become the Teaching and Learning page. The Study page

was extended to focus more on research and links to useful reading sites. Finally, a Planning and Testing page was added. In this way, all four pages covered the modules delivered on the Aston MSc in TESOL/TESP as well as addressing all the feedback received to date.

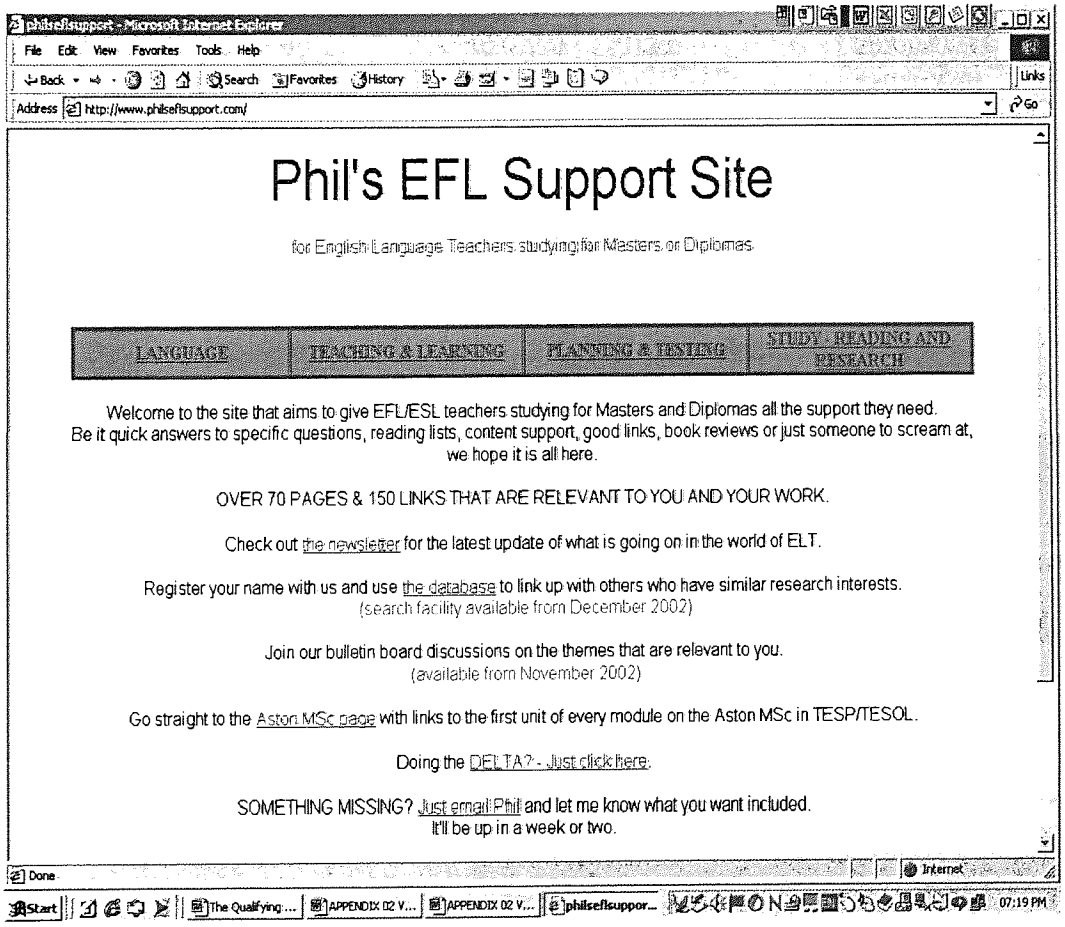


Figure 4-5: Photo-shot of Version 2 of website

The reorganization of the website (See Figure 4-6 on the next page) cut down on the number of title pages, but the site still had over seventy pages and one hundred and fifty

links with several of the newly requested pages, for example testing, needing further additions (see Figure 4-7).

The revamped site not only had a new appearance (above) but also a new structure (see the site map below).

HOME				
LANGUAGE	TEACHING & LEARNING	PLANNING AND TESTING	STUDY (READING & RESEARCH)	NEWSLETTER(S)
				WHO'S WHO
				BULLETIN BOARD
				QUICK ANSWERS
				FAQs
Grammar	Teaching Methodology	Lesson Planning	Reading	ASTON MSc PAGE
Lexis	Learning	Testing	Research	
The Skills	Technology	Syllabus Design	Action Research	
Phonology	Independent Learning	Materials Production	Writing Better Assignments	
Discourse	Teacher Dev.	ELT Management	ESL Organisations	

Figure 4-6: Website map, Version 2

Once again the feedback was overwhelmingly positive and encouraged me that I was not just on the right track but filling a definite need for TESOL professionals pursuing further studies.

> "Dear Phil,
> Thanks for the newsletter and updated site. I've just had a quick fly through parts of it – it looks great! Seems more cohesive/integrated than before, dunno why exactly, maybe the organisation is clearer and links are more directly 'linked'/relevant...?"
>
> User 01.10 – 27/06/02

> "Dear Phil,
> Firstly congrats on your web-site its been very informative".
>
> User 01.16 – 22/08/02

The biggest disappointment at this stage was the registration page. This was initially uploaded so that users could enter their details and areas of interest into the site's newly created database, and would hopefully allow teachers doing research in a specific area to directly contact others working and studying in the same areas. However, when the

database failed to open for the users, I decided to act as the link between users. I did this by responding to user requests for contact with others using the database kept locally on my computer. For example, as detailed in Chapter 5, Section 5.4, I successfully introduced a group of users in China (User 1.28), Croatia (User 1.27) and the UAE (User 1.23). Although I was concerned that this may have resulted in users being able to contact fewer colleagues it did ensure that I was involved in seeing these contacts being made and could report fully on them.

STUDY – READING & RESEARCH						
	Reading	Research	AR	ELT orgs.	Great assign	**TOTALS**
# of pages	0	4	4	0	2	**10**
# of links	18	11	6	9	2	**46**
PLANNING & TESTING						
	Lesson plan	Testing	Syll. Des.	Mat. Prod.	ELT Mnge	**TOTALS**
# of pages	3	3	1	1	1	**9**
# of links	5	4	3	0	5	**17**
TEACHING & LEARNING						
	Methodolgy	Learning	T. Dev.	Technology	Inde learnin	**TOTALS**
# of pages	8	2	5	1	1	**17**
# of links	14	7	8	21	4	**54**
LANGUAGE						
	Grammar	Lexis	Phonology	Skills	Discourse	**TOTALS**
# of pages	7	3	2	8	3	**23**
# of links	8	8	5	5	5	**31**
	5 Main Pages					
	25 Sub-pages incl. newsletter, registration & Aston MSc pages					
	64 Pages incl. DELTA pages					
TOTAL	94 pages					
	168 links					

Figure 4-7: Site review with number of pages and links (November 2002)

This reorganization of the website was an interesting mixture of how the Aston Masters in TESOL programme is structured and an informal glimpse into how teachers group their knowledge. The organisation of the site, therefore, became a constructivist approach in practice as it could be suggested that it mirrored how teacher learners link schemata of knowledge together. "We need to help learners process knowledge and then remap and reform it" (Williams 2001). I could suggest that the website effectively did just that as a transparent reflection of how Group One users were mapping out their knowledge structures. Since the website was from hereon only developed according to the input of the users, it could be claimed that both the website and the user emails provided a window into how their knowledge was developing. I investigate this claim further in Section 6 below as I review the use of the website as a vehicle for the research.

In 2003, the site saw the first postings of user articles, a feature which I had first noted in my research journal eighteen months earlier as I thought about "offering the site as a publication point" (September 7th 2001), thereby allowing the cycle of teacher knowledge to be extended as users had the opportunity to become knowledge-providers.

I then signed up to 'Matrixstats' (http://matrixstats.com), an Internet service which enabled me to add the next feature showing how many hits the site received and which were the most visited pages. This allowed me to see the difference between the response rate and actual use of the site and also supplied some interesting data on pages which were not being used and could be deleted as well as the most used pages and areas that needed development.

As with Version 2, I did not make any changes without consulting the users themselves and relied on their feedback to continue building and developing the site. The Matrixstats data allowed me to follow the usage of the site and see whether or not it matched the feedback I was receiving from the active users. The data provided also showed the entry point into the site for users, the exit point from the site and the pages where users had spent the longest time. There were 12 major pages in the first six months of statistics (see Figure 4-8), and I wondered in my research journal at the time if I should make these top areas direct links from the home page. However, the date to close off the data collection was drawing near and I decided against another major revamp, especially with no feedback from the users.

Philseflsupport.com: Page Hits

Cells show number of total hits each month

Top eight pages each month selected

	2003					
	July	Aug	Sept	Oct	Nov	Dec
Index	702	870	828	961	896	864
Teaching Methodology	551	326	522	607	535	449
Teaching Learning	386	289	431	501	447	399
Language	300	249	302	356	429	313
DELTA timetable				327		
Study	336	216	341	379	342	280
Reflective Teaching						242
Learning	254	197	322	395	466	255
Skills	289	201	252		329	216
Learning Styles1					277	
Lesson Planning			284	306		
Planning Testing	195	154	246			

Figure 4-8: Page hits on site from 2003

Throughout the year I continued to add pages regularly with the newsletter updated more frequently in response to a suggestion from User 1.04 at the only face-to-face interview

with a user. "Keep posting the changes to the site on the newsletter. If you posted the newsletter (and first page) more often, you'd get more returns" (User 1.04). This feedback saw me shifting the newsletter to the front page, and this was greeted favourably by those users who responded.

I included links from users as they came in (e.g. User 1.12 on Co-operative Development), so the site began to resemble the needs and work of the users more closely.

The data from Matrix Stats at the end of 2003 was, in the words of my research journal (January 2004), "mind-boggling" with an average of over 13,000 hits a month in the second half of the year.

Philseflsupport.com: Total Hits

	Jan	Feb	March	July	Aug	Sept	Oct	Nov	Dec	
2003				11089	9525	13152	16486	16937	13320	13,418

Figure 4-9: Hits on site in 2003

Thereafter, I often worried whether or not I was keeping the site up to date since much of this year was focused on the data analysis. However, the feedback from Matrix Stats re-assured me that the site was meeting the needs of the users it was aimed at as did much of the feedback.

The end of the year saw me closing off the data analysis with a series of questionnaires to the Group One users, and the first updates in 2004 were those suggested by the

questionnaire returns. After that the site was updated less regularly as the focus of the research moved on to the data analysis throughout 2004 and the writing of the thesis in 2005. The number of users visiting the site remained fairly consistent, suggesting that the site was fulfilling a definite need in the field.

Philseflsupport.com: Total Hits

	Jan	Feb	March	April	May	Aug	Sept	Oct	Nov	Dec	
2004	16369	18405	19939	18035	18313	9374	10356	14342	13917	16416	15,547
2005	16302	15927	18325	13653							16,052

Figure 4-10: Average hits on site 2003-2005 = 15,006 per month

4.3 Email: A viable communicative and research tool

The nature of the research determined the use of email as the only viable communication and research tool. The advantages and disadvantages of using email as a research tool have been widely discussed over the last ten years. Most researchers seem to agree with Boshier (1990:51) that email provides researchers with a context for an ideal speech situation with "equality of opportunity and reciprocity" for both participant and researcher. However, later studies warn of the proliferation of email in today's electronic world and the difficulty participants have in dealing with yet another form of academic 'junk mail' (Selwyn & Robson 1998).

The narrowing down of the research to one focus group addressed the concerns of some authors about using email for research purposes. To avoid the academic 'junk mail' tag, Schmidt (1997) suggests that the only valid approach to using email in research today is when the research targets a specific, narrow group of participants. By doing this, my

research allowed me to initiate follow-up with participants directly one-to-one when an exchange had paused for any length of time or when I required a better understanding of the user's thought processes when using the site and responding to me.

It should be noted that the first 57 emails with suggestions on what should be included in the data are not part of the data on responses to the website. This is partly due to the research only focusing on the Group One users from January 2002, but it must also be admitted it was not until then that I had devised a suitable routine for saving and recording the amount of data coming in. This must be noted as a limitation as there is a lack of hard evidence to support the initial set-up. Nevertheless, this initial set-up would not be included in the core data for this research, because the website was eventually reorganised around the needs of Group One users and all that data was available.

The routine devised was eventually one of simplicity itself and ensured that all emails were logged as they were received or responded to. When an email was opened, it was copied and pasted into a Word document created specifically for that user, in the case of the focus group, or for the group. I checked that the user was already in the database and, if not, I added their details (name, email, location and area of interest) against an individual user number. If any details were missing, I requested them in my response. I then logged the email against the user's individual number on the data sheet of responses that tracked the number of emails from any one user before adding the email to the monthly feedback sheet below. This 4-step process (copy-paste, database, data sheet of

responses and feedback sheet) became such a routine that I continue it up to the present for all emails related to the site.

Once the site had been launched in June, 2001 complete records were kept with a simple track record of the emails received monthly (see below for 2001) supporting the more specific data described above.

Feedback On Version	**Date**	**# of responses**	
1a	June 30th,2001	18	
1b	August 24th, 2001	+12	(=30)
1b	Sept 13th, 2001	+11	(=41)
1b	Oct 27th, 2001	+3	(=44)
1b	Dec. 10th, 2001	+4	(=48)

Early on in the research, it became clear that emailing active users whenever changes were made to the site created greater response and feedback. This is compatible with research that has demonstrated that email generates a higher response rate than mail shots especially when it targets a specific group (Schaefer & Dillman 1998). User 1.22 made a specific point of this feature of individually targeted emails. In my journal entries I considered weekly emails as I updated the site (Research Journal: 18th Nov., 2001) and individual emails to those studying the Aston MSc in TESOL (Research Journal: 7th Dec., 2001). The first consideration I decided against as I felt it would be too intrusive and end up with the users treating the site updates as they would spam. The second consideration became an initial move towards the reworking of the user groups in 2002.

By the end of 2002, I had received two hundred and twenty-seven emails from all users as detailed below.

Feedback On:			
Version	**Date**	**# of responses**	
1b	Jan 10th, 2002	+6	(=54)
1b	Feb 2nd, 2002	+22	(=76)
1b	March 10th, 2002	+20	(=96)
1b	April 24th, 2002	+22	(=118)
1b	May 20th, 2002	+7	(=125)
1b	June 24th, 2002	+12	(=137)
2a	Aug 18th, 2002	+7	(=143)
2a	Aug 30th, 2002	+17	(=161)
2a	Sept 30th , 2002	+34	(=195)
2a	Oct 30th , 2002	+17	(=212)
2a	Nov 30th, 2002	+15	(=227)

The email below, sent in June 2002 before leaving on summer holiday, was typical of the updates I sent out as the site was updated and is included here as an example.

> "Hi everyone,
> Just before we all dash off for summer, please find the revamped http://www.philseflsupport.com/ attached.
> All the changes are based on your input for which I remain eternally grateful.
> The reorganisation means a few pages are a bit sparse, but there will be a major content upload in September.
> The newest feature is the posting of articles submitted by yourselves, so if you would like something you have written included please just email me with it attached. The latest newsletter gives you details of all the changes.
> Please let me know of anything you want added or changed etc etc.
> Thanks again for all your input and have a great summer
> Phil :):)"
>
> Developer to all users (June, 2002)

The number of responses continued to grow with 47 emails received in April 2003, the most successful month to date, and I continued to receive an average of ten emails a month in 2004-2005, even though little has been done to the site since the close of data collection in December, 2003.

4.4 The discussion board: Developing interaction

The discussion board feature of the site was added in January, 2003 following a request for a forum to discuss journal writing. The provider selected from five potential discussion board services was ProBoards (http://www.proboards.com/index.html), which allows users to generate their own discussion threads, hosts a general discussion board feature and provides an excellent free help line. The journal writing thread was directly linked to the journal writing pages on the website, and the general discussion board was linked to the front page of philseflsupport.com.

Despite the potential I felt this service would provide the take up was much lower than expected. However, one of the services provided by Proboards allowed me to see the detail on the number of lurkers, or visitors to the site who did not register and remained anonymous. This figure was much higher than the number of discussion board posts, suggesting that many users of the discussion board, as with the website, were entering the site to see if there was anything that matched their needs without registering or posting. I noted this in my research journal of May 2003 saying, "It also looks as though the discussion board may take off a bit better now (...) with only 4 posts on General and 5 on Journals there have been 54 and 62 visits – that's a lot of lurkers". I should also note at this point that the ProBoards' service did not differentiate between unique and returning visitors, so the number of lurkers is almost certainly lower than the figures indicate. Nevertheless, the response to the site's discussion board echoed the findings of other research into the use of electronic discussion forums in educational settings (Guzdial & Turns 2000, Strijbos et al 2004).

The interpretation of this trend and how it matches the social constructivist possibilities provided by the web and discussion boards is further discussed in Chapter 6, Section 1.1. I had also initially intended to add a real time exchange feature through forums such as MSN Messenger but the poor response to the discussion room convinced me that such a feature required a far tighter discourse community (see Chapter 6, Section 1.2 for further discussion).

By the end of 2003, when the data collection was closed there were 29 registered users on the discussion boards with 8 of these being Group One registered users, 5 being Group One users who had not registered on the site and another 5 registered in other groups. There had been a further 8 discussion threads posted:

Any DELTA tutors out there?

Question for all interested

Research and the net

The MSc Discussion List Archive is up and running

TESOL PhD CALL component Distance Learning

Design Website authoring tools

PhD TESOL Distance

The MSc Discussion List Archive Project

5 of these had been posted by Group One users and the two MSc threads were specifically on one user's research. The difference between active users of the discussion

board and lurkers is starkly evident in the figures below which show the number of postings (P-x) against the number of visits (V-x) to the thread.

Journal Writing (P-18, V-279)	TESOL PhD Distance Learning (P-3, V-67)
Research and the Net (P-7, V-223)	Discussion List running (P-4, V-54)
Discussion List Project (P-9, V-198)	Design Website (P-5, V-53)
PhD TESOL Distance (P-1, V-72)	Question for all (P-1, V-36)

The posting figures are even more of a stark contrast when it is considered that 22 of the 67 postings were by the developer in an effort to get the board more active, and another 9 were by the user who posted his research, and in reviewing his messages the aim was a similar effort to generate more discussion on his initial postings. There were a further 25 postings from seven other Group One users. The most active posting thread was the initial one requested on journal writing which has seen 18 separate messages.

Nevertheless, the discussion board at the time of writing is still active with 41 registered users and several more threads posted including a couple on how to deal with the Foundations module of the Aston MSc.

Maybe the only conclusion to be drawn is that, while this may be a desirable feature for any support website, most knowledge discussion takes place in more focused forums or in a face-to-face forum with colleagues who know the teacher's local context. This conclusion is substantiated in much of the literature on computer-mediated

communication (CMC) as discussed in more detail in Chapters 5 (Section 2) and 6 (Section 1.2).

4.5 The user groups: Worldwide interest

The section on emails above detailed how the emails were saved into Word documents and added to the database. This section uses that database to demonstrate the growth in the number of users of the site over the two years as well as describing the initial formation of the groups and how this changed.

The initial two emails described in Section 2 above were sent to a total of 104 teachers who I divided into six groups based on my working relationship with them, so that the database on February 19th, 2001 listed the groups as follows:

Previous & present Diploma candidates:	23
Masters candidates past and present:	3
DELTA tutors:	6
Colleagues at my present college:	37
Colleagues in my former department:	19
Colleagues throughout the system of 11 colleges in the UAE:	16

The fifty-seven responses received not only came from the members of these initial six groups but also from another thirteen teachers who had had the message passed on to them or had seen the message posted in the Aston newsletter. By March 30th 2001, the total number of names was, therefore, one hundred and seventeen. The group of Masters candidates had grown to twenty-seven interested parties as eight Aston MSc participants

responded along with a number of ex-colleagues who had started their Masters and been misplaced in the original groupings above.

By mid-September 2001, the site had received forty-one responses. I made it a matter of principle to respond to every message as soon as I received it and followed up and responded to queries within a couple of days. This became a feature of my communication technique, and the number of responses I received commenting on its importance meant that it was included as one of the keys to effective web facilitation (see Chapter 6, Section 2).

By the end of the year, I had received 48 responses and at the beginning of 2002 I sent a Happy New Year message to all of those in the user groups and gave the link to the site again. At the same time, I decided to narrow the research focus to one group of teachers studying for the Aston University MSc in TESOL/TESP (see Chapter 3, Section 2.1). To this group of teachers I sent the following message:

> "Hi everyone,
> HAPPY NEW YEAR
> Welcome to the new 2002 face of philseflsupport.com. A website designed especially to meet the study and research needs of Aston MSc participants.
> It now has 65 pages and over 100 links.
> Please check out the latest Newsletter for all the update details.
> The second phase of my PhD has narrowed my research to focus exclusively on the support required by teachers taking the Aston MSc, so please tell me everything you would like to see on this site. Version 2 will be reworked around the specific needs of Aston MSc participants.
> Looking forward to hearing from you.
> And here's hoping that 2002 proves to be the best ever.
> Phil ☺☺☺"
>
> Developer Message to MSc participants about change in focus (January 9th 2002)

By June 24th 2002, when Version 2 had been launched and a further email to all participants had been sent, I had received a total of one hundred and thirty-seven responses to the initial site and had one hundred and nine teachers who had initiated contact by actively responding to the site or the first email.

The groups and data now only contained those active users who had contributed to the research by emailing me. The former number of one hundred and seventeen names was based upon all colleagues whether they had responded or not. I still left the 'not interested' parties on the database, but very much in the background and by 2003 I had stopped emailing them all together.

The database that I created therefore had eleven groups but only six of them were active users and referred to in the data.

Group Number	Group Name
Group 1	Aston MSc Interested
Group 3	Worldwide ELT Contacts
Group 4	HCT Interested
Group 5	ADMC Interested
Group 6	ADWC Interested
Group 10	UAE Interested
TOTAL Responded	Groups: 1, 3, 4, 5, 6, 10
Group 2	Aston MSc Not Responded Yet
Group 7	HCT Not Responded Yet
Group 8	ADMC Not Responded Yet
Group 9	ADWC Not Responded Yet
Group 11	UAE Not Responded Yet
TOTAL Not yet responded	Groups: 2, 7, 8, 9, 11

Figure 4-11: Database overview of eleven groups

I have not shown more than the summary page of the database as the other pages detail personal information about the users. This database allowed me to add new respondents to both the data sheets and my electronic mailing lists which were similarly organised into the six active groups. The database was used to track the growth of the groups whereas the data sheets tracked each individual's email contributions via their individual user number.

Code (user, no.)	Location & Interest	Date of first contact	# of turns	
			Initiated	Responded
1.1	UAE	27/01/02	2	3
1.2	Taiwan	13/02/01	2	3
1.3	UAE	09/04/01	16	24
1.4	Korea	23/03/01	4	7
1.5	Japan	26/02/01	1	3
1.6	Greece	28/02/01	2	7
1.7	Switzerland	09/02/01	2	6
1.8	Spain	11/02/01	1	0
1.9	UAE	10/04/01	3	8
1.10	Ireland / Vocab	25/07/01	11	25
1.11	Greece / IMCD	27/08/01	6	7
1.12	Japan / CD	23/10/01	4	1
3.1	UK*	03/01		
3.2	Lebanon / Publishing	05/01		
3.3	UK	02/01	1	
3.4	USA	13/11/01	2	

Figure 4-12: Extract from data sheet on responses

During 2002, the Aston MSc interested Group One grew from twelve to twenty-two users, and at least four of them responded several times in extensive exchanges with the developer (see Chapter 5 for examples). This pattern was echoed across the groups with the 227 responses being received from just 144 users.

Group Number	Group Name	Total participants
Group 1	Aston MSc Interested	22
Group 3	Worldwide ELT Contacts	59
Group 4	HCT Interested	17
Group 5	ADMC Interested	21
Group 6	ADWC Interested	13
Group 10	UAE Interested	12
TOTAL Responded	Groups: 1, 3, 4, 5, 6, 10	144

Figure 4-13: Control Groups 2002

The fastest growing group was the 'Worldwide ELT contacts' group as teachers who stumbled across the site responded with a total of 35 new users joining in 2002. This growth initially indicates that the knowledge sought by a small group of Aston MSc participants appears to match that sought by a far wider TESOL community. This comparison of knowledge sought is further investigated in Chapter 7.

4.6 The website as a vehicle for research

This chapter has described the development of the website and the number of users involved in the site. It has given more detail on how the email data was collected, and this section now builds the bridge between the previous methodology chapter and the detailed analysis presented in Chapter 5.

Chapter 3 determined the centrality of language and the primacy of email and discussion board exchanges in this research. The assumption is that the analysis of the language in these data types will provide insights into the development of teacher knowledge that can be linked to the principles proposed in Chapter 2.

Since the website has been developed based upon the input of the users from Group One, as evidenced in the email data, it is consistent to claim that the categories emerging from this data can provide insights into the structure of teacher knowledge. By focusing on those email segments that request knowledge, we can gain understanding from the analysis to support Principle 1 that states teachers actively process the knowledge they

receive. This understanding can be supported by the website structure, which has been built upon those requests.

The email and discussion board data should also provide evidence of Principles 2 & 3, by providing evidence of teachers questioning, discussing and reflecting upon the knowledge received. The growth of the website with details on additions to existing pages could well support this analysis, especially when requests on the same topic are received from the same users. The assumption is, therefore, that the data from the emails, discussion boards and website will allow the analysis to track the deepening understanding of a topic by an individual user.

This assumption would lead to the same data providing evidence of Principle 4, by giving examples within the email requests and discussions of how the teachers are actively researching, testing and examining their developing knowledge.

The email segments and discussion board contributions should also provide data that demonstrates the users sharing their knowledge with others, either through direct contact with other users or through the provision of material to be uploaded to the site. By focusing on those email segments that provide knowledge, we can gain understanding from the analysis to support Principles 5 and 6.

By reviewing how the data generated by the website can inform the principles in Chapter 2, this section demonstrates how the website has been used as a vehicle for this research.

Although the website has been primarily a conduit for the data, it has nevertheless been central to the whole research since its constant update has ensured that the users return to the site on a regular basis, as confirmed by the user questionnaires.

Chapter 5 extends the brief description in this section by analysing in detail the email and discussion board data generated by the website. The analysis of this combination of data from emails, discussion boards and website growth is then used to provide insights for the interpretation chapter, which examines the proposed model of teacher knowledge development from Chapter 2 drawing upon the reflections of the users in the questionnaires as well.

4.7 Summary: Research reflections

All of the teachers who responded were self-selected, having heard about the site from colleagues, institutions or by direct contact. This self-selection supports the research as it is using the website as a vehicle "to review how knowledge is sought and built as teachers pursue further studies" (Research journal: 14th August, 2001). The use of the verb 'seek' implies the active pursuit of knowledge by teachers who are undertaking self-directed inquiry.

Sections 3 and 4 above raised the question of lurkers and whether or not these are passive seekers of knowledge. I would suggest that this is not the case. These lurkers are passive users of the site but clearly active seekers of knowledge since they are surfing the web in

active search of knowledge that meets their needs. The question of lurkers is further discussed in Chapter 6, Section 1.1.

At the beginning of 2003, I was able to tap into the user observations from their responses to the questionnaires. From the 30 questionnaires sent out to the users of the Aston MSc control group, I received 15 responses, giving a 50% return, which I would consider extremely high. The responses were all positive which is perhaps not surprising since these were the self-selected most active users of the site. We could assume the negative comments were expressed in the failure to respond. However, the fact that busy teachers who were also studying could find the time to go into such detail reflected positively on the sense of belonging that they had gained from the site. The response including a detailed commentary on how User 1.29 surfed through the site (see Appendix 3) was particularly impressive.

Many of the users noted that they first entered the site with a specific purpose in mind, most often connected to the particular module they were about to take in the Masters programme. However, several also noted that they then began to use the site for reference to inform their teaching and classroom practice particularly "because the site is updated regularly" (User 1.01) and has "a lot of interesting and relevant links" (User 1.03). User 1.06 said he would visit the site "more after having completed the MSc than before ... as the relevance of the site to my teaching is stronger than ever".

Other users mentioned that the site also helped to reduce the sense of isolation that distance learners and teachers working abroad may feel with its "good body of links to a wide range of professional areas/issues" (User 1.09) and "its wealth of useful information" (User 1.10).

The final observation I will draw attention to here is the connectivity between "like minded souls" (User 1.10) which the site has begun to provide, especially through the opening of the discussion boards. "The Web page has also connected me to SIGS and interesting discussion groups that I wouldn't have found on my own" (User 1.23). User 1.28 added that the site enabled them to have the confidence to enter "the discourse community more easily".

Overall, the site has been a success as both a research tool and a support site for teachers studying for further diplomas or Masters. The response from other users including teachers far removed from TESOL (see Chapter 7, Section 4.3) indicates that the site has fulfilled a need for teachers, especially those who rely on the web whilst studying at a distance. Chapter 8 will explore the way forward for the site, since philseflsupport.com can, I believe, contribute more to the profession.

Chapter 5 – The Analysis:
Knowledge-Seeker, Discusser, User and Provider

This chapter details the analysis of data from January 2002 to December 2003 and outlines the main categories that emerged from the 36 'active' users of focus Group One; those doing the MSc in TESP / TESOL from Aston University. 'Active' users are those who have emailed me and / or signed onto or contributed to the bulletin board. The discussion board saw five users who did not email me or register on the full site, eight users who were registered on both the site and the discussion board, and a further three users registered on the site who contributed to the discussion board as guests but did not register. The analysis draws on data from the 247 email messages from 31 Group One users (see Appendix 4) and my developer responses, my theory memos (see Chapter 3), the 34 discussion board contributions from 16 Group One users and the 15 Group One user responses to the November 2003 questionnaire and follow-up. As described in Chapter 3, Section 2.7, the reflective responses to the questionnaires will be used in the interpretation in Chapter 6. In this chapter, I will only draw upon those responses which drove the analysis forward.

The categories that emerged from the analysis can be divided into two distinctive types:

1 - Main categories directly related to patterns of knowledge: knowledge-seeker, knowledge-discusser, knowledge-user and knowledge-provider.

2 - Minor categories which did not relate directly to user patterns of knowledge but gave important insights into the development of relationships, the website and a developer discourse strategy.

These are represented diagrammatically in the figure at the top of the next page:

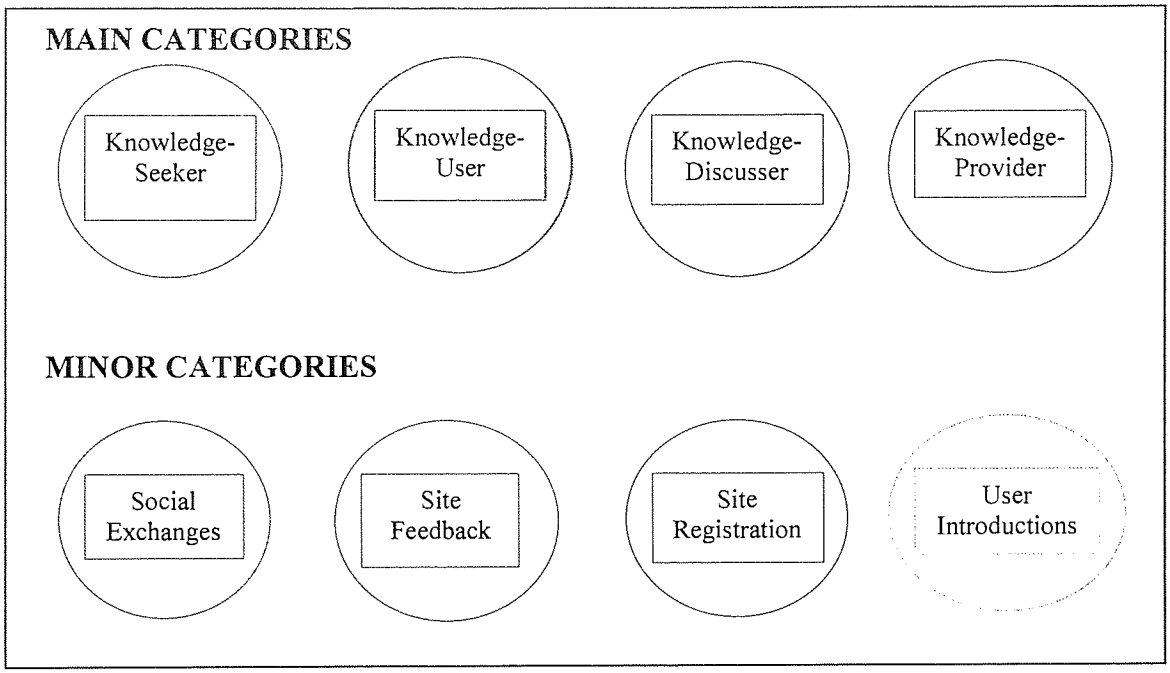


Figure 5-1: Categories that emerged from the data

This chapter now describes the analysis of the data and the emergence of the categories in detail, and Chapter 6 will demonstrate how this analysis ties into and extends the model and principles of teacher development proposed in Chapter 2.

I deal first with each of the major categories in turn before looking at the analysis of the minor categories.

5.1 Knowledge-seeker

In this category, the primary communicative function (See Chapter 3, Section 2.6 and Sinclair & Coulthard 1975) was one of knowledge seeking with the user taking on the role of knowledge-seeker, and the exchange resulting in the user receiving the knowledge sought. The exchanges under this category divided into three turns; query / response / thanks.

The first turn, **Query**, can be defined as:

User requests knowledge.

This definition was left short and broad so that it encompassed the different stages involved in many users requesting knowledge and help. These included detailing a problem, suggesting their own solutions and direct pleas for help as can be seen below.

The second turn, **Response**, can be defined as:

Developer responds to user's request for knowledge.

This definition was also left short and broad so that it encompassed the different stages involved in the response and which initially included ways of promising and hedging until a full response to the initial query could be developed.

The final turn, **Thanks**, can be defined as:

User thanks developer for the knowledge provided.

This definition clearly describes the final turn of the knowledge-seeker exchanges with the only exception being example A below where User 1.01 did not provide the final part of this standard exchange.

It was interesting to note from the initial categorisation that this basic three-part exchange was filed under eight different speech act subcategories with request, suggestion, problem description, potential solution and promise added to the three overriding subcategories that I finally settled upon. Having completed the analysis of the first 22 users' data in 2002, I decided to review and recategorise the data to see if it did indeed fall under this basic 3-turn discourse pattern. The examples below aim to

give a sense of the emerging clarity that I felt and indicate that this review worked well. Whilst the speech acts of suggestion, problem description, promise etc are clearly within the message, the overriding turn-taking pattern is one of query, response or thanks.

Throughout the theory memos there were notes on the relationships demonstrated in these exchanges, and the final entries settled upon one of seeker to expected knower with the result of the user receiving knowledge required to continue their exploration. It should be flagged at this point that when other users responded to knowledge seeking requests the exchange was moved to the knowledge-provider category.

Exchange A:

my biggest problem is that I find some of the **books** listed in the MSc pack from Aston University, which I borrowed from you are repeating the same things. Perhaps the answer to that is to have regular contact with other MSc candidates. As we are all busy professionals we should be selecting the **books** more carefully and choose the ones that fulfill our needs.	Knowledge-seeker: Query - stating problem - offering solution
Could you please advise me about any **key books** relevant to the units in the **Foundation Module**.	Knowledge-seeker: Query – Request

From User 1.01 (2 Feb 2002)

By leaving the initial subcategory divisions in the right-hand column, the analysis attempts to remain transparent and show the indecision I felt early in the research when I tended to separate the data into almost sentence level divisions that were over-complex, unrealistic and failed to capture the discourse turn-taking pattern that began to emerge from the data. This example above, I believe, clearly demonstrates how the message is one of knowledge-seeker query with the other elements leading up to the final request / query.

Can you be more specific about 'the units in the **Foundation Module**' that you want key reading for? Or are you just looking for those **books** I'd actually splurge on at this very early stage? Let me know and I'll get back to you with my **top 10** ☺☺	Knowledge-seeker: Response

Developer to User 1.01 (3 Feb 2002)

This example was typical of responses where the initial query was so ambiguous that I could not ascertain exactly what it was that the user was requesting. My standard response was to ask the user to specify exactly what it was he wanted as I did in the above example. Once this user had specified that it was in fact Text and Discourse material he was looking for, my response was as follows:

TDA - my **top 10** would be (and best read in this order): 1. ..... 2. ... 3. etc **Hope this all helps** - I have my own **copies** of about seven of the above which you can borrow of course.	Knowledge-seeker: Response

Developer to User 1.01 (8 Feb 2002)

Unusually, there was no direct thank you to this response, so this example was in fact a couple of simple adjacency pair turns of Query-Response / Query-Response (Brown & Yule 1983: 230). The lexical chain (Halliday & Hasan 1976) which tied the exchanges together revolved around "books", "top 10" with its clear elision of 'books' and the synonym "copies". The query turn was marked by "could you please advise me" and the response by "hope this all helps".

Exchange B:

I'm quoting from your LEX(?) assignment (the one on 4 dictionaries that you sent me last year) in my TDA assignment,	Knowledge-user
but don't have a proper **reference** - date, title, etc. If it's not too much trouble, **could you let me have** details? Date and title should do, I think.	Knowledge-seeker: Query

From User 1.10 (20 Jul 2002)

In this knowledge-seeker query, I have left the first part of the query so that the context is clear. It also demonstrates how the categorisation of knowledge-user overrides the lead-in to the actual query and knowledge-seeker segment of the email. This will be further discussed in Section 3 below.

Got all my files at work, but the title is as stated on the page. Since it is now on the web **I would quote it** as such and **reference** the date as this year rather than as an unpublished Masters exercise from 1993.	Knowledge-seeker: Response

Developer to User 1.10 (7 Aug 2002)

This was an interesting example, because having begun to hedge the reply I ended up responding with the knowledge requested. This was borne out by the user's thanks below:

Thanks. I'll **refer** to it as per your website then.	Knowledge-seeker: Thanks

From User 1.10 (7 Aug 2002)

The lexical chain tying the exchanges together was "reference" and "refer". The query turn was marked by "could you let me have", the response by "I would quote it" and the final turn by "Thanks".

Exchange C:

What I need is "native writer's **reformulation** of the interpretation" to be done in the places left for this purpose in Sample Task 1 and Sample Task 2.	Knowledge-seeker: Query
Could you let me know whether you have time to do this? If you have, that will be a great help for me.	Knowledge-seeker: Query

From User 1.13 (13 Aug 2002)

This query was chosen as it was different from other queries in that it asked for a specific task to be completed. The query was marked by "what I need is" and "could you let me know". The use of "reformulation" started the lexical chain in this exchange, which, as you will see below, continued with the developer's response promising and hedging final completion over a series of emails.

I'll be happy to do this. However, I'm off to Dubai tomorrow first thing and back Friday and then the company send me to Egypt until the 21st August. Then we're off to Dubai for the annual conference until the 25th. I can get to it the day after that hopefully. Please let me know if that is OK and I'll hopefully have the **reformulations** to you by the 26th/27th. Let us know by reply. Hope it works out for you time wise....	Knowledge-seeker: Response - Promise

Developer to User 1.13 (13 Aug 2002)

This was the best example from the data of me hedging my responses. This first response's hedging succeeded, I believe, because it gave full details about why I was delaying my final response. I could also note here that this use of hedging also ensured I maintained a rapidity of response that became one of the keys to effective web facilitation (see Chapter 6, page 234). It was followed by:

Will get it to you as soon as I get back	Knowledge-seeker: Response – Promise

Developer to User 1.13 (16 Aug 2002)

And then again with this response, which was sent on the date that the final response had been promised:

I promise **I'll get round to** the **reformulations** next Friday - September the 1st and will comment on the materials in detail as well to make up for it... hope this is Ok	Knowledge-seeker: Response – Promise

Developer to User 1.13 (24 Aug 2002)

This was all followed by the final response below which was sent two days before the September first deadline I set myself above.

Got round to it all a couple of days early :):):) Please find the **reformulations** attached. I have done them in large blue font on separate pages so that they stand out. The first one is on page 7 and the second on page 10. ..... **Hope this all helps**	Knowledge-seeker: Response

Developer to User 1.13 (30 Aug 2002)

The use of "hope it helps" flagged the end of the response turn in a similar way to the first exchange example above, and the user completed the exchange with the final turn marked by "thank you".

You have given me great help by doing the **reformulations**. Your suggestions for my LEX will also be useful for me. **Thank you** very much.	Knowledge-seeker: Thanks

From User 1.13 (4 Sep 2002)

The next exchange example I draw upon for this category was from a series of exchanges which resulted in the narrowing down of the knowledge-seeker category to the final three-part exchange of Query-Response-Thanks.

Exchange D:

Anyway I was wondering if you have got time, maybe you **could give me some advice** or some handy hints: (if I knew then what I know now type thing) before I start. You may remember the first module; **FND**. Any feedback/wisdom you might like to share with me would be greatly appreciated as I'm a bit nervous to say the least, so if you get the time thanks a lot & good luck on your PHD.	Knowledge-seeker: Query - Request

From User 1.16 (22 Aug 2002)

The first query turn was clearly signalled by "could you give me some advice", and the lexical chain was started with "FND".

It's a while since I did the **FND** module and it has changed substantially since then. However, I have had the chance to go through the latest version both for the website and in helping local teachers on the MSc in their approaches. The secret to the **FND** module is to follow it closely and .... (advice follows)... Please let me know if you need anything from me and **I hope this helps.**	Knowledge-seeker: Response

Developer to User 1.16 (24 Aug 2002)

The developer's response was linked to the initial query by the lexical chain continuation with "FND" and the turn marked by the developer's use of "I hope this helps".

Thanks a lot for replying so quickly & coherently, I'm sure your **advice** will come in very handy when I start studying.	Knowledge-seeker: Thanks

From User 1.16 (25 Aug 2002)

The final turn was cohesively linked back to the opening query by the user's lexical choice of "advice", and the exchange concluded with the final turn marked by "thanks".

I have decided to include here one example of an email segment that I initially classified as knowledge-seeker but then moved to site feedback. This inclusion gives the reader some inkling as to the initial struggle I had with categorisation when I was basing my structure around speech act (Brown & Yule 1983) segments at a sentence level rather than a structure of broad categories that looked at user intentions.

Exchange E:

Aha. I have an idea! **Why don't you set up** an on-line chat group on your website?!! Is that technically possible? Say once every two weeks or something like that, with some kind of notice posted ahead, etc. And maybe a rudimentary list of tips for on-line chat (a limited set of conventions). I'd love it! :) :)	~~Knowledge-seeker Suggestion~~ NO – this is clearly Site Feedback

From User 1.10 (12 Apr 2002)

The initial train of thought had been that a suggestion to add a feature to the site was an indication of knowledge sought. However, as the definitions for the site were drawn up and the results of the exchanges were clarified, it was evident that I was reading too much into the email segments and needed to focus on the writer's intent. Adding a feature to the site was clearly aimed at improving the site and not the knowledge patterns focus of the main categories.

The final two email data examples below are brief illustrations of how straight-forward I found it to categorise the 2003 data under the knowledge-seeker category with the corresponding three turns.

Exchange F:

This brings me to your experience: you made a **website** as part of your dissertation. **How** did that go? **What** exactly was your **thesis**? **What** issues did you look at? **Were** you able to collect enough references? Just wondering.	Knowledge-seeker: Query

From User 1.29 (15 Sep 2003)

My **website** is part of my **PhD** studies – the vehicle of my data to be exact and you can see how it has gone (11,000 hits last month ☺☺) My **thesis** is: Teacher Training & Development On-line-Can we give teachers the support they need from such a distance? **It is based on** ... (continues) ...	Knowledge-seeker: Response

Developer to User 1.29 (16 Sep 2003)

The first turn was marked by the direct questions and the lexical chain initiation with "website" and "thesis". The developer response was marked by "it is based on" as the lexical chain was continued with "website", "thesis" and "PhD". The detail of this segment was a regular feature of my responses and mentioned by many of the users, which lead to one of the keys to effective web facilitation detailed in Chapter 6, page 239.

Thanks for the description of your **PhD**. (.....).	Knowledge-seeker: Thanks

From User 1.29 (16 Sep 2003)

The final turn was concluded by "thanks", with "PhD" providing the lexical link to the previous segments within the exchange.

Exchange G:

I was interested in materials connected to keeping **research diaries** both for myself and the different ways students could keep diaries while doing a qualitative research project in oral history i.e personal, field, method, theory etc. I was also interested in ways of analysing qual data e.g transcripts, questionnaires, messenger transcripts etc **Could you help?**	Knowledge-seeker: Query

From User 1.25 (20 Feb 2003)

The user marked his knowledge seeking query with "could you help" and "research diaries" was the lexical item picked up on by the developer's response.

will happily put something up on qualitative research methods and journaling methods - there's some good stuff on **research diary** use I can link into from ethnographic research. Meanwhile **try this link**: http://kerlins.net/bobbi/research/qualresearch/bibliography/ethnography.html which links into most of the major qualitative research centres and journals with a focus on ethnography - several excellent research diary sources among them.	Knowledge-seeker: Response

Developer to User 1.25 (20 Feb 2003)

This response differed slightly from earlier responses in that it not only gave a specific link for the user but also helped the developer see ways in which to expand the website based on this user's request.

Thanks for the advice/info. As valuable as ever, especially since I plan to do the LEX exam in December	Knowledge-seeker: Thanks

From User 1.25 (25 June 2003)

This was an email segment with double thanks for both the response above and another one that linked the user into the lexis pages of the website in April.

The final three examples are taken from the discussion boards and demonstrate how clearly the user queries fell under the first turn for this category.

Exchange H:

I'm just starting out on the foundation course and had two thoughts.

1. Is there anyone else in the same boat right now ***who can offer any advice?*** *What* ***books*** *to start on etc?*

User 1.34 (23 May)

Exchange I:

My question*: Are* ***references*** *and title pages expected for the portfolio tasks?*

User 1.35 (9 Jan)

Exchange J:

I've just finished one of the core reading texts provided in MET: ***Dunkel****... I'd like to ask anyone interested for feedback on the following two points raised in the article:*

1. .... Identifying six listener functions... I count only five functions (a-e): ..... What am I missing?

2. In the last paragraph of p.446 Dunkel claims ..... In the footnote at the bottom of this page, we learn that ..... Does anyone else sense a conflict of interest here? ***I'd appreciate your feedback.***

User 1.35 (1 Apr)

So, the knowledge-seeker category is defined as those users seeking knowledge with exchanges moving through a standard three turn discourse pattern of query – response – thanks. Chapter 6 will investigate how this category maps onto the model of teacher development and informs the revision of the principles proposed in Chapter 2.

5.2 Knowledge-discusser

The most interesting feature of the data analysed was the fact that there were only five professional discussions in 2002 under this category. The category was initially defined as professional discussion between the user and the developer that led to an improved professional understanding for either of the parties with the theory memos noting that the predominant roles were professional colleagues. This restriction to the 'professional' field meant most discussions fell under the social category, and led me to posit that this possibly followed standard social practice of building trust socially before launching into the potentially face threatening forum of professional discourse. This interpretation and others are further explored in Chapter 6, Section 1.2. The 2003 data revealed only three further discussions by email and three on the discussion boards.

Based upon these eleven professional discussion exchanges the category can be defined as:

Exchanges focusing on a specific professional subject with over four turns leading to an improved professional understanding for either of the discussers

The category was distinguished by the length and number of turns. These often covered a large number of discourse elements, and I did begin by analysing the individual segments in depth finding that their structure was linguistically signalled by discourse markers. However, this approach seemed to fly in the face of how the other categories were being analysed using models of turn-taking. So, I stepped back and drew an overall picture of the discussion from that turn-taking perspective. In some of the examples below, I have left a few of the initial subcategories in the right hand column so that the reader can see the reduction process and segment length.

I then tried dividing the category into turns with the following four emerging: introduction of topic; developer reply (with encouragement); user reply (with agreement); and (conclusion). The brackets indicate elements that were not required, and I quickly dropped this separation of developer and user replies as the discussers obviously took turns. Therefore, the developer / user distinction was not required and was actually inaccurate in the discussion board data since the turns were user / user. In the examples below, I have once again left these turns in the right-hand column to demonstrate the process of analysis.

Finally, I settled on the overall definition above using the number of turns as an initial separation of segments based on key words from the discussion topic, noting in my theory memo that "the discusser turns seem to follow a clear lexical chain". These key words are bolded in the examples below. I then copied all the segments into a separate

file and decided whether or not the full exchange met the definition settled upon above. This process ensured the additional wording of *focusing on a specific professional subject* and *over four turns* in the definition. This clarified when segments originally noted as part of a knowledge-seeker or knowledge-provider segment were in fact the initiation of a professional discussion, and also clarified when discussions were clearly social in nature.

The examples below do not show the full discussions as this would cover tens of pages, but examples from the majority of turns are included to demonstrate their compliance with the definition set out and the importance of lexical chains in the topic development (Brown & Yule 1983, McCarthy 1991).

Exchange A - Turn 1:

(.....). For me the course is thoroughly fascinating.	Knowledge-seeker: Query
I am very interested in '**Students' Learning Strategies**'; I feel our Middle East students are completely lacking in these.	Knowledge-discusser: Introduction
Could you please advise me (.....).	Knowledge-seeker: Query

From User 1.01 (2 Feb 2002)

As indicated, this segment was initially embedded within a knowledge-seeker exchange but, once the discussion had been taken up and progressed, it was clear that this was indeed the catalyst and topic (student learning strategies) introduction to the discussion that followed.

Exchange A – Turn 2:

The **learning strategies** our students here tend to use are based on their previous education and focus on rote and **memorization**. One of the most important things for us ... **(continues)** .... There is a really good paper hiding behind that last sentence ☺☺	Knowledge-discusser: Developer reply (with encouragement)

Developer to User 1.01 (3 Feb 2002)

The developer's reply was flagged by his continuation of the lexical chain with "learning strategies" and the introduction of "memorization" as a type of learning strategy. The original 'reply with encouragement' definition was marked by the final sentence encouraging the user to continue his exploration with a view to future publication.

Exchange A – Turn 3:

I **totally agree** with you about the **memorization skills** of our students. I particularly like to use memory-based drills and exercises with my total beginner classes. I have experienced many times that when I rely on their **memory**, it definitely gives a confidence boost to my students and their motivation levels shoot up. They come to the board and act out a short dialogue and their faces light up with pride because they are actually communicating in English; the fact that they **memorized** the dialogue is not important for them. I achieved great results in the summer with my military students using **memorization** techniques. because it is a very relevant and important subject for the Middle East and Turkey and involves all the **learning skills**.	Knowledge-discusser: User reply (with agreement)

From User 1.01 (8 Feb 2002)

The user's reply was flagged by his continuation of the lexical chain with both "memorization" and "learning skills" used. The use of "skills" as a synonym for "strategies" was a continued feature of this category and is a standard use of lexical cohesion (Halliday & Hasan 1976, McCarthy 1991). The original 'user reply with agreement' definition was marked by the first sentence's "I totally agree".

Exchange A – Turn 4:

I like the sound of the Action Research project on getting the most from Arab **students' memorization skills** .... A good couple of assignments could look into that ☺☺	Knowledge-discusser: Developer reply (with encouragement)

Developer to User 1.01(8 Feb 2002)

It was interesting to note that this first exchange was not actually concluded but petered out when the user did not reply to the final segment in the exchange. This was in part due to the fact that the user did start the action research group mentioned in this final segment, and the discussion shifted from the developer to the action research team formed. This petering out of discussion was one seen in the discussion boards with long gaps between turns before silence left the discussion thread hanging. This petering out of computer-mediated discussions has been noted in the literature (Foley & Schuck 1998:123, Tolmie & Boyle 2000:121, Stacey 2001), and Chapter 6 investigates the reasons for this further. The example below is typical of this.

Exchange B – Turn 3:

> ..... *I am in favour of free access to as much as possible on the web, and feel that if (some) publishers weren't so tight-fisted, they would ga in a lot of new readers, with eventual commercial payoffs. (Yes, I know that's a controversial position) Surely, the internet will eventually be the main source of academic info and exchange anyway...?* ....

User 1.10 (22 Feb, 2003)

Exchange B – Turn 4:

> *Thanks for the input M. I'd love to know what the publishers' stance is. Anyone know?* ....

Developer (4 May, 2003)

In the above exchange, the lexical chain was predominantly focused on "publishers" and "free access" with the latter being the topic developed through the exchange. The user's term "in favour of" marked the user reply with agreement in this short four turn exchange. The three month gap between turns was frequently observed in the discussion board exchanges, and the developer response was typical in its attempt to

jump start the exchange again through its final question "anyone know?", even if it was unsuccessful in this example.

The following example began with the user providing the 'Web Heads' link for the website and a query from me on the user's experience of taking part in the online chat forum about web-based learning.

(copied from Dogme ELT list message) V. (...) has been running an endeavour called "Webheads" for a number of years now. Every Sunday they meet live online with English learners from around the world - it's free, and anyone can join whenever they like. The venue these days is http://www.tappedin.org **Here are the details** ... [evonline2002 webheads]	Knowledge-provider: Provision

User to Developer (8 Mar, 2002)

Thanks ML. A shame I missed this. **Was it any good?**	Knowledge-provider: Thanks

Developer to User (9 Mar, 2002)

The user's response below, with (...) indicating lines removed, was in fact the first turn in a long discussion exchange on the human element in web communication. By including extracts from most of the turns below, I hope to have captured the development of the topic and the importance of lexical chaining.

Exchange C – Turn 1:

Yes, thought you might have found that discussion (...) interesting. No one from the MSc showed up. Pity, it would have been interesting to get other reactions. **Mine follows.** BUT, I found it ve-ry interesting (my first experience of on-line chat) and what I realised as it progressed was that the discussion itself *demonstrated* how genuine interaction can take place via this medium and.... **(continues) ...** **'Human'** was the word that came to mind for me.... **(continues)** ... All quite interesting, a whole new world in terms of education and **communication.**	Knowledge-discusser: Introduction of topic Introducing Topic

From User 1.10 (10 Mar 2002 – 90 lines)

When I have shortened a segment, I have indicated the length of the turns in brackets after the date. As can be seen, the turn above was a substantial piece of writing of 90 lines, and the key words in the lexical chain were used several times. In this opening turn the words "human" and "communication" introduced the topic and provided the beginning of the long lexical chain which followed on the 'human' element in web based discourse and how it is captured.

Exchange C – Turn 2:

Interesting how the 'human' element came out of the synchronous discussion - an element oft missing from the asynchronous communication on the web - and one I often prefer as it allows time for reflection. The 'rambling' and unguided nature didn't seem to prevent the issues being discussed in some depth and it'll be interesting to see if any of these 'contacts' prevail. Keep me posted (...)	Knowledge-discusser: Developer reply – with encouragement

Developer to User 1.10 (15 Mar 2002)

The developer's reply was marked by the continuation of the lexical chain with both "human" and "communication" used, and the encouragement flagged with the phrase "keep me posted".

Exchange C – Turn 3:

(Quotes last turn in exchange) ...Yes. Maybe the ideal situation would be an ongoing email or similar list (allowing time for reflection) AND a, say, once-a-week on-line discussion (to allow for spontaneity)? I do feel the 'human' element is helpful - ... (continues) ... Over to you?	Knowledge-discusser: User reply (with agreement) (and encouragement)

From User 1.10 (15 Mar 2002 – 20 lines)

The user continued the exchange with the "human" element of the lexical chain marked and, most interestingly, encouraging the developer to respond with the phrase

"over to you". This was one of the first examples in the data where the user took on the role usually seen from the developer of maintaining the email exchange through direct questioning or encouragement.

Exchange C – Turn 4:

I'll have to see if I can catch V over the up-coming TESOLArabia conference and see what I can get out of him viz-a-vis his feedback and impressions. A quick thought based on our asynchronous **email discussions** - I feel that with yourself and about a dozen others I've 'caught' that **human** element although it's taken time. **Do you agree**? And then - the question whirling around my head - if yes, **how have we** captured that **human** element asynchronously?	Knowledge-discusser: Developer reply (with encouragement)

Developer to User 1.10 (16 Mar 2002)

In this turn, the developer continued the "human" element of the lexical chain and narrowed the discussion to "email discussions". It also appeared that the developer became more involved in the discussion at this point with his double encouragement to the user to reply with the "do you agree" and "how have we" questions.

Exchange C – Turn 5:

(Quotes last turn in exchange) … Yes, definitely. As to 'how', first and most obviously, is the fact that you are quite '**human**' yourself! The following points seem relevant: 1) you respond to all emails, usually very promptly 2) you do so in a friendly manner (without doing a detailed analysis(!), I'm not sure exactly how you manage to get that 'friendliness' across in text, but I know you do); hmm, this needs some refinement, perhaps 'a friendly and *conversational* tone' - the 'conversational' aspect is probably manifested in the two-way nature of your messages, I mean you ask questions, express interest, etc, rather than simply answering a question or whatever (I'm trying hard to analyse it, as you can see!) 3) you seem to be open to whatever (sometimes nutty and personal in my case) question or point of view is expressed by the person writing to you, ie you listen and acknowledge it (again, guessing a bit, by making specific	Knowledge-discusser: User reply (with agreement)

comments in response), thus making the person feel 'heard' and keeping dialogue open, (...) 4) you respond concretely to requests or suggestions re your website, so people feel you are **genuinely interested** in what they want and their suggestions/requests are taken seriously. What does all that add up to, other than treating people as serious **human** beings? And good **communication** skills - which means what? being attentive to peoples' inexplicit (...) signals and really listening. Of course, as you say, it takes time to build up more in-depth **communication**, (...) The whole topic **of email discussion** lists etc (as a type of discourse) interests me more and more. (...) So, yes, I think in any serious attempt at community-building, more **'humanness'** is helpful, if not essential. The question is how, specifically, to make that happen. Well, we're playing around with some ideas... What **do you think** yourself, about your question above?	(and encouragement)

From User 1.10 (19 Mar 2002 – 75 lines)

The developer's double encouragement appeared to have been successful based upon this long 75-line user reply. I decided to keep a good part of the user response since many of the points he makes are relevant to the research in this thesis and especially the discussion on the keys to effective web facilitation in Chapter 6. The user continued the lexical chain with multiple references to "human", "communication" and "email discussions", and introduced the final phrase to the topic development with "genuine interest", that could be seen as a part of the "human" element already flagged in the lexical chain. Once again, the user took on a lead role in the discussion and encouraged the user to respond with his final "what do you think" question.

Exchange C – Turn 6:

(Quotes last turn in exchange) ... **Definitely** - I just wonder why **it** takes off with some and not with others. **It** definitely takes time, but it's the who and who not that fascinates me more ☺ ...(continues)....I'll have to think about whether that is summat I've developed or whether it is just a natural reflection of my character and the way I see **communication** --- but then why is that it works with some (like yourself) and others no ... I've got some	Knowledge-discusser: Developer reply

wonderful **examples** of **miscommunication** via email that have taken me a number of profuse apologies to get out of. "What do you think yourself, about your question above?" I think I've answered that in my responses above or am I dodging the question? If you say YES to that I'll have to put a more analytical cap on ☺☺	(with encouragement)

Developer to User 1.10 (23 Mar 2002 – 24 lines)

These turns demonstrate how the lexical signals around the topic of discussion made it easy to categorise long segments as knowledge-discusser exchanges, especially as both the participants in the discussion tended to use multiple occurrences of the lexical items in the change. The segment above was a good example with the use of "it" referring to the "human" element and the antonymic reference "miscommunication" linking to the chain started with "communication".

Exchange C – Turn 7:

Why does it work with some and not others? you said. Dunno, maybe it's just that something clicks, or maybe it's some similarity of styles of expression or references to experience that creates/makes evident some kind of common ground (...). But **communication** is a minefield - so many potential places to go wrong! (...) exploring in my lasst message, was - what are the 'mechanics' (so to speak) of good **communication**? (...) Some people obviously have it 'better' or more consistently than others. Sensitivity? **Genuine interest**? But, given the motivation, it should be (I hope!) at least possible to 'improve' one's **communication**, (...). I'd have to really think about the occasions when my **communication** has 'gone wrong' and 'gone right' and the individuals and situations involved to see if there are any common or recurring features. (...) What about your email **miscommunications - can you see** any patterns? Last thought (obvious, but) - after all, **communication** is a two-way street...(continues)...	Knowledge-discusser: User reply (and encouragement)

From User 1.10 (23 Mar 2002 – 75 lines)

Once again, this user reply continued the lexical chain with multiple references and an encouragement for the other party, in this case the developer, to continue the

exchange. This pattern continued over the next couple of turns until the developer concluded the exchange in the following turn.

Exchange C – Turn 10:

Thanks for the discussion. Makes me wonder if we shouldn't work on a publication about making online **email discussion** work from two insiders points of view. (...) Anyroad - **thanks a million for all these exchanges**... we're hitting on really important areas and ones that haven't been rigorously explored or researched. It's exciting ☺☺	Knowledge-discusser: Conclusion

Developer to User 1.10 (20 Apr 2002)

It is interesting to note that the function of the thanks in this segment was to clearly bring the discussion to a close, and this analysis is supported by the fact that the user did not continue the discussion but continued to email on other areas of interest. It was equally interesting to see this discussion take off again eight months later after this email from the user in January, 2003, with the lexical item "email discussion" from the original exchange triggering this continuation.

Exchange C – Turn 11:

I'd like to learn about it properly at some stage, maybe check back on V's Webheads for starters (which I never did after my initial excursion, cos of other pressures). I had a very active group of teachers on a Comenius (EU funded) course this summer and we've kept in touch, so I'm trying to encourage them to start a simple **email discussion group** for whatever topics interest them, which I'll also participate in (but think it's better if I'm not the 'organiser'). Will see how/if that goes...	Knowledge-discusser:

User 1.10 (08 Jan 2003)

The discussion continued for another month with five more long turns before the developer concluded the discussion using the thanks approach noted above.

Exchange C – Turn 16:

Thanks for your last email. Had to reply from work as my home email is playing funny tricks on me --- the wonders of technology :):) Thanks for the AJET articles - one of my favourite journals at the moment with so much high quality stuff on it :)	Knowledge-discusser: Conclusion

Developer to User 1.10 (09 Feb 2003)

The best example of knowledge-discusser from the discussion boards was a six-month series of exchanges that petered out with an open question to all participants that has never been answered. The most interesting features of this discussion were the way it moved from 'blogs' to 'journals' and 'discussion boards' and how the discussion involved other users who were not part of the control group of Aston MSc users.

Exchange D – Turn 1:

> *I thought of this:*
> *If a teacher started an online BLOG, the kind ...I have a friend who lives here in T. who has a blog. ...I occasionally even scan strangers' blogs, but those aren't ...*
> *The first blog I kept for my DE assignment was private, while the other one was for the group, so you have the option. Also, you don't have to blog daily, ...*
> *It would take a special teacher to do this, though. Not everyone would want to be so open with their students...*
>
> User 1.32 (17 Jun 2003 – 27 lines)

The user started the exchange with an open thought and introduced the topic and the lexical chain through his multiple use of the term 'blog'.

Exchange D – Turn 2:

> *Thanks L... I think this is similar to how many of us run our 'email' or WebCT journals with students. I wonder what you think the benefits to 'blogs' over these mediums are? Not too sure about the verb 'blog'? ☺ Does it mean we are writing differently when we 'blog'?...*
>
> Developer (17 Jun 2003 – 9 lines)

The developer picked up on the entry and tried to capture a wider response by adding "journals" to the lexical chain. It still took three months for the first reply to be uploaded with the same user pointing out the difference.

Exchange D – Turn 3:

> *... Yes, I do think we 'blog' differently because most 'bloggers' blog for audiences...*
>
> *The word blog and its forms is in the Oxford Dictionary new words list...*
>
> User 1.32 (16 Sep 2003 – 10 lines)

The developer again responded immediately and tried to widen the discussion to "journals" and how they differ from "blogs". These two lexical items provided the chain for the continuing exchange.

Exchange D – Turn 4:

> *If we write differently when we 'blog' it must go beyond being audience specific as that, I would suggest, defines all writing. When we write, our audience is always paramount even if that audience is ourselves when we write our personal diaries.*
>
> *What do you all think? Does that affect the way our students write their journals?...*
>
> Developer (17 Sep 2003 – 9 lines)

This question was more successful with three user replies following in the next two weeks including two from worldwide users.

Exchange D – Turn 5:

> *I do. If I had a 'public' blog, which I don't, I'm sure I'd be writing for those who read it... Students would be journal writing for teachers to read... I don't think I like the idea of forcing students to keep journals ... The only success I*

ever had with journals when I was teaching English was when I'd collect them from the learners and write something back to them... A cool function on some blogs is the comment one ...

User 1.32 (17 Sep 2003 – 28 lines)

The following user reply attempted to move the discussion away from "blogs" and online "journal" mediums.

Exchange D – Turn 6:

... Like Phil, I find myself in a country (...) where writing and reading are not as culturally bound as speaking and listening. I have to develop these weaker skills ... Essentially, I am going to use the traditional handwritten journal ...

User 3.08 from Group Three – worldwide users (22 Sep 2003 – 12 lines)

But, the discussion was brought back to "blogs" and the focus on communication via a web medium quickly by another worldwide user:

Exchange D – Turn 7:

In a way, I feel that "blogging" is more like an outlet for some exhibitionists. My daughter is always reading the blog ... I question whether these blogs are giving us insights into the writers, or ... I find that she goes to certain blogs just to vent...

User 3.40 from Group Three – worldwide users (30 Sep 2003 – 10 lines)

The exchange included another two replies before the developer tried to appeal to a wider audience by turning the exchange to discussion boards. This attempt was unsuccessful with this final turn never receiving a response as the discussion petered out, like so many discussion board exchanges seem to do as noted earlier and further discussed in the next chapter.

Exchange D – Turn 10:

> *... I am still inclined to 'feel' that a discussion board needs a narrow focus and a narrow community with a common goal to succeed... Who else out there has had similar or, even better, totally different experiences with discussion boards?*
>
> Developer (19 Dec 2003 – 10 lines)

So, the knowledge-discusser category is defined as exchanges focusing on a specific professional subject with over four turns leading to an improved professional understanding for either of the discussers. The category is distinguished by the length and number of turns with a basic turn taking pattern of topic introduction – reply - conclusion. This pattern was distinguished by the number of reply turns with many of these turns encouraging the other party or parties to continue the discussion. Chapter 6 will investigate how this category maps onto the model and principles of teacher development proposed in Chapter 2 and further discusses some of the issues briefly raised here, including the petering out of CMC discussions and the human element in web based exchanges.

5.3 Knowledge-user

This category emerged in a very different way to the other categories analysed in this chapter. As described in Chapter 3, Section 2.7, questionnaires were sent to each of the Group One users at the end of 2003 after the initial analysis had been completed. The questionnaire specifically asked users about the nature of their involvement with the site and whether or not they agreed with the initial categorisation. The analysis of the email exchanges with the user was also sent with the questionnaire to demonstrate to the user how I had arrived at the categories to date.

User 1.04 stated that he saw himself primarily as a knowledge-user, a category which I had not included in my original analysis. As an example, the user showed how he had taken advantage of the action research resources on the site. He argued that he used the site when he was exploring "something new", using the site to give "background so I can talk intelligently" about the subject. He went on to say that he had done "the Aerol AR course", which is one of the links on the action research page of the site. He continued by pointing to an extract from his data:

I'm hoping to **take advantage of** your AR sites as I really need the info and background.	Knowledge-user: Plans

From User 1.04 (2 Feb 2002)

This extract was initially embedded in a segment detailing the user's studies and had been categorised as one of social–study. However, the user suggested that this segment clearly differed from my initial categories as it demonstrated how he was using or planning to use the knowledge available on the site, and he expressed his certainty that I was bound to find other examples in my data.

I found the user's argument convincing, and, in line with my qualitative research beliefs (see Chapter 3), I had to at least revisit all of the 2002 data and see if other examples of knowledge-user were evident. I saw this approach as consistent with my overall analysis, because the category was emerging from the data, albeit from another insider's perspective. In order to ensure this consistency, I returned to the 2002 data and reanalysed it afresh, adding the knowledge-user category with the email segment above from User 1.04 and finding further examples throughout the 2002 and 2003 data.

The category can be defined as:

> *The user demonstrates they (plan to) use the knowledge available from the site.*

I originally thought that further analysis would see the emergence of subcategories, but the definition above successfully covered all the data reviewed with the bracketed 'plan to' covering segments such as the one above from User 1.04. In this category, the primary communicative function (See Chapter 3, Section 2.6 and Sinclair & Coulthard 1975) was one of demonstrating knowledge use with the user taking on a reporting role of his actions.

I'm **quoting from your LEX**(?) assignment (the one on 4 dictionaries that you sent me last year) in my TDA assignment,	Knowledge-user

From User 1.10 (20 Jul 2002)

This example was originally categorised as a knowledge-seeker segment but, with the emergence of the knowledge-user category, it was clear that it belonged there as the user referred specifically to his use of the knowledge available on the site. In this case, the user quoted from a paper available on the lexis page of the site.

Got **your site posted on our TD SIG site**. Several people said they really liked it and found it useful for their studies.	Knowledge-user

From User 1.04 (19 Mar 2002)

This example was one of several where the user had taken the website or a specific page on the website as a source of knowledge and linked it into sites he managed or was associated with. I would argue that this action is an example of knowledge use,

because it is a clear demonstration of the user, having reviewed and studied the knowledge available, taking the action of making this knowledge available to others. It is akin to quoting from the content in a paper but, in this case, the user quoted the website as a source on another professional site. In the example below the user linked both the website and the discussion board page to his website.

I'm wondering: is it ok if I **add links to** your pages? **I have one to your support site, and one to the forum** so that CPs can have easy access to a place to discuss it. I hope linking to your site is ok. Let me know either way.	Knowledge-user

From User 1.29 (8 Sep 2003)

This next example was originally embedded in a site feedback segment, but differed from the rest of that segment in how it specifically stated the way in which the user intended to use the three pages on maximising student writing, corrections and futures in his teacher education courses.

but esp liked your 'Maximising Student Writing' paper, as well as the Correction Worksheet, Futures, etc (I'm teaching a 2-week(!!) course for a group of unknown(!) teachers in a couple of weeks **and may use some of these**).	Knowledge-user

From User 1.10 (27 Jun 2002)

I noted in the theory memos that there were several segments which implied how the user had worked with the knowledge on the site. An example of this implication was:

One very **useful** thing is the article on connecting the proposal to the dissertation, (... **continues...**) as it gives a very **clear** structure and lots of explanatory detail.	Site feedback: Feedback

From User 1.09 (17 Aug 2003)

Theory Memo 9 then detailed why these segments are not included. "It is also interesting to note how close the last sentence in the 17th August site feedback segment is to knowledge-user. However, the generalist term "useful" has been one of the lexical markers for site feedback and the segment does not include any of the linguistic markers for knowledge-user so the segment should be categorised as site feedback". The lexical markers noted in the theory memos for knowledge-user included phrases such as: "I'm quoting from"; "your site posted"; and "may use some". Whilst the implication from the above example would indicate that User 1.09 used the article to structure his dissertation, there was no clear evidence that this was the case, and therefore the segment remained categorised as site feedback. The difference between knowledge-user and site feedback has hopefully been clearly demonstrated with the above two examples.

The email data analysed above demonstrated how the knowledge was used to quote in assignments, link into other websites, provide opportunities to take online courses and give input to taught courses. The questionnaire responses provided more detail of other knowledge-user activities including how the respondents used the site as:

A storage facility:

> *"For my LEX assignment I found your Support Site on LEX very helpful. It was complementing my reading of the module. Besides it releases me from storing addresses, links and certain summaries (lexical studies notes)".*
>
> (From User 1.07)

A guide to decision making for the user's studies:

> *"The site helped me to decide which modules to order (or not) and when to order them".*
>
> (From User 1.14)

A support and source for assignment writing:

> *"A week ago I used the section on 'Approaches to Reading' as I am doing my Methodology Module on the use of graded readers".*
>
> (From User 1.01)

A source of affective support:

> *"As a Distance Education participant the site also served as a source of affective support, helping to reduce the sense of isolation DE participants may feel.*
> *As a teacher I have also begun to use the site as a source for reference for language and methodology questions and again as a teacher working abroad the 'support in the face of isolation' factor is important".*
>
> (From User 1.06)

This range of different uses demonstrated in the data gave an indication of the versatility of the site and showed how it met the needs of different users. The emergence of this category from the perspective of a site user as opposed to the perspective of the developer maybe allowed this variety to be fronted in this category. I found the use of the site as an affective support especially interesting, because this had been one of the aims behind setting up the website. This point will be further discussed in Chapter 6.

The knowledge-user category also differed from other categories in two related ways. First, the data analysed were exclusively from the users and detailed their exchanges with the site rather than their exchanges with the developer. Secondly and directly linked to the first was the very different role of the developer in this category, which would perhaps be best described as a non-role.

So, the knowledge-user category is defined as segments that demonstrate how the knowledge on the site was used. The category is distinguished by the lack of an active

developer role and the variety of uses described in the data. Chapter 6 will investigate these uses and how they map onto the model and principles of teacher development proposed in Chapter 2.

5.4 Knowledge-provider

In this category, the primary communicative function (See Chapter 3, Section 2.6 and Sinclair & Coulthard 1975) was one of knowledge provision with the user taking on the role of knowledge-provider, and the exchange resulting in another user receiving the knowledge that he sought or the website being expanded to provide the knowledge to all users. The exchanges under this category divided into the following turns; (developer request) – (user intention) – (developer acceptance) – user provision – developer or user thanks. The exchanges were as short as a two-turn exchange with user provision and thanks, and as long as a full exchange using all five turns.

The first turn, **(Developer Request)**, can be defined as:

The developer asks the user for contributions to the site.

This definition thereby covers requests for articles, papers and links for the site that could be of benefit to all users. The turn is bracketed, because these turns were not evident in every exchange as there were examples where the user provided a link or an article for the site without an initial request.

The main turn, **(User Intention) or User Provision**, can be defined as:

The user provides knowledge for other users or promises to do so.

This definition covers the intention to provide and the actual provision rather than separating them into two separate turns. Originally, the definition included the phrase *contributions to the site* but the clear provision of knowledge to other users via the discussion board exchanges meant that the phrase was replaced by *for other users.*

The final turn, **(Developer Acceptance) or Developer / User Thanks**, can be defined as:

> *The developer (or User) acknowledges and thanks the user for their contribution.*

The addition of *or User* in brackets allowed the discussion board exchanges between users to be included. The combination of acknowledgement and thanks allowed the definition to include turns which followed on from both the intention and provision of the previous turn.

The first example was a straight-forward three-turn exchange of developer request-user provision-developer thanks. It was a request for a link to a website that a user had developed for his local context and talked about in previous exchanges. Having reviewed the website, it was evident it met the needs and previous requests of other users.

Exchange A – Turn 1:

I'd like to have a permanent link to your site built in. First of all, can I do that? Is it OK by you? Second, where do you see it best placed? I was thinking of redoing the study page as an Aston specific reading and research page and saw it going in there quite nicely. What do you think? How's the site going? If it's taking half the time	Knowledge-provider: Developer request

mine is, where do you find the time? Have you tied it into any of your assignments yet?	

Developer to User 1.02 (27 Jan 2002)

The linguistic marker in this turn was the combined question "can I have a permanent link to your site" with the user responses over two days of "a link like that sounds great" and "linking my site on your study page" providing the continuation of the near conversational exchange.

Exchange A – Turn 2:

Yes a link like that sounds great. I've done very little to the site over the last few months and home to spruce it up a little over the Chinese New Year.	Knowledge-provider: User provision

From User 1.02 (28 Jan 2002)

.... linking my site on your study page would seem like a good idea. This promises to be a page with a wealth of useful information.	Knowledge-provider: User provision

From User 1.02 (30 Jan 2002)

The exchange was completed with the developer immediately thanking the user for permission to link to his website. The words "thanks" and "input" provided the lexical markers for the segment.

Exchange A – Turn 3:

and thanks again for all the input.	Knowledge-provider: Thanks

Developer to User 1.02 (30 Jan 2002)

The second example followed the same three-turn pattern with the question "could you send me the URL" marking the developer request, the URL signalling the

provision and the reference to "Birmingham site" and "invaluable" giving the lexical markers for the developer's acknowledgement.

Exchange B – Turn 1:

I haven't seen Birmingham's link to past assignments - could you send me the URL? Why didn't you find it useful?	Knowledge-provider: Request

Developer to User 1.04 (29 Jan 2002)

Exchange B – Turn 2:

I finally found the B'ham site. This link should take you to the B'ham resource room. Just scroll down to 'Essay' near the bottom, click, and you'll see a list (by area of interest) of papers submitted ...(continues).... http://www.bham.ac.uk/CELS/CELS%20pages/Resource%20room/Res%20Room.htm	Knowledge-provider: User provision

From User 1.04 (2 Feb 2002)

Exchange B – Turn 3:

The Birmingham site will definitely prove invaluable for some participants although, like you, I find it a lot of reading for few nuggets.	Knowledge-provider: Thanks - Opinion on provided website

Developer to User 1.04 (3 Feb 2002)

The third example was initiated by an open request for contributions to the site, and the resulting exchange provided examples of all the turns found in this category.

Exchange C – Turn 1:

Would you be willing to send me any of your assignments and have them posted?	Knowledge-provider: Request

Developer to User 1.09 (27 Jan 2002)

Exchange C – Turn 2:

I don't mind sending some assignments to your site --- ... (continues)	Knowledge-provider: User intention

From User 1.09 (27 Jan 2002)

The lexical markers in this exchange were very similar to other exchanges in the category with the request signalled by the question "would you be willing to send me" and the lexical item of "assignment" running through the whole exchange before the

developer uses the synonym "article" in the final turn. The user followed up his earlier intention to provide with a provision turn a month later.

Exchange C – Turn 3:

Attached is a TDA assignment and a "task" to go with it. Feel free to add it/them to your website if you wish.	Knowledge-provider: User provision

From User 1.09 (Feb 2002)

The turn below was an example of how the developer needed to adapt some contributions from their original format to a layout and content that could be better accessed via the web medium whilst, in this case, not contravening any agreements about the posting of assignments.

Exchange C – Turn 4:

I can't actually post assignments - it has been agreed with Aston that I should link into their site of examples. However, if you would allow me, can I have a deeper look and see if it could possibly be reworked a bit to act as a stand alone page? Would you be OK with that? Let me know and thanks a million for your support	Knowledge-provider: Developer acceptance

Developer to User 1.09 (Feb 2002)

Once the user had responded in the affirmative, I edited the submitted assignment into an article format and posted it before sending the following thanks.

Exchange C – Turn 5:

Please can you check out your article via the newsletter link on your name. Let me know if you want anything changed. http://www.philseflsupport.com/newsletter3.asp Thanks for your input and all your support as always	Knowledge-provider: Thanks

Developer to User 1.09 (1 Oct 2002)

The next two exchanges were typical examples of user provisions that were unsolicited and which were quickly accepted with thanks as they matched previous user requests.

Exchange D – Turn 1:

I found a very good site on Discourse Analysis. I hope others will find it useful too. This is the URL for the site: http://bank.rug.ac.be/da/da.htm#sa	Knowledge-provider: User provision

From User 1.01 (18 May 2002)

Brilliant – thanks	Knowledge-provider: Thanks

Developer to User 1.01 (19 May 2002)

The lexical markers noted in almost all of the unsolicited contributions to the site included an expression of "hope" and an adjectival choice such as "useful" or "helpful". The developer's final turn of thanks was often not more than a few words. This pattern was also evident in Exchange E below although the concluding turn of thanks was slightly longer due to the explanation for the delay in posting.

Exchange E – Turn 1:

Anyway, Widdowson's ' Explorations in Applied Linguistics 2' is in the 'references' for the methodology and action research module. The whole book (and no.1 too) is downloadable for free in PDF format from www.oup.com/pdf/elt/teachersclub/explorations2_intro_ch1.pdf though you probably have to go to www.oup.com/elt and join the teachers' club first (it's free, but you have to get a password to log in which they email to you). Hope this is helpful and isn't repeating info already on your site.	Knowledge-provider: User provision

From User 1.27 (3 Apr 2003)

Exchange E – Turn 2:

Thanks a million for this tip -- you'll see it appear in the next couple of weeks as I update the ideas that have come in while I was away at the TESOL Convention.	Knowledge-provider: Developer thanks

Great to have you on board especially with tips like this :):)	

Developer to User 1.27 (4 Apr 2003)

The discussion board also provided examples which matched the email data analysis closely, and I include just one short one here. The first provision turn lacked the element of "hope" with a more straight-forward "there's a free site", but the adjectival use was evident in the phrase "easy to set up and use".

Exchange F – Turn 1:

> *There's a free site, www.schoolblogs.com* ***which I used for a project. It's easy to set up and use, but there are a few quirks (sorry Phil ☺) in the system.***
>
> From User 1.32 (6 Jun 2003) Knowledge-Provider – User Provision

Exchange F – Turn 2:

> *Thanks L. --- (continues).*
>
> From Developer (6 Jun 2003) Knowledge-Provider – Developer Thanks

The final example from the email data showed a further turn pattern which was seen a number of times in the data. In this turn taking pattern, a user offered to contribute to the site and awaited the developer's acceptance before actually taking the knowledge provision turn.

Exchange G – Turn 1:

I also have a few more good listening sites for learners (have to cross-check against what you've got), let me know if you're interested after you get your Q Rep over with and I'll send them to you. :) :) (...)	Knowledge-provider: User intention

From User 1.10 (8 Jan 2003)

The theory memos noted the similarity in the language used in the intention segments throughout this category with phrases such as "I don't mind" and future tense sentences predominating like the "I'll send them" from the example above. The initial

turn above also started the lexical chain of "listening sites" that ran through the whole exchange. The following three turns continued the chain with "the listening ones", "listening / pron. sites" and "get them posted". It was particularly interesting to note the use of pronouns to refer to "sites" in the two developer turns, and I wondered in the theory memos if this was due to the rapid turn-taking in this exchange with all four turns completed in less than two days.

Exchange G – Turn 2:

Thanks for the offer of all the links - rather than you double checking why not **just send the lot** ...(continues)... It'll be nice to get **the listening ones** coz the skills page is looking a little short on links with all my workshop stuff going up beside it :):)	Knowledge-provider: Developer acceptance

Developer to User 1.27 (9 Jan 2003)

Exchange G – Turn 3:

I've sent my whole file for specifically **listening/pron sites**. **There are** 7 altogether (2 = pron). ... (continues and attaches 7 documents)...	Knowledge-provider: User provision

From User 1.10 (9 Jan 2003)

Exchange G – Turn 4:

BRILLIANT. **Thanks** a million M. I'll check them out and **get them posted** if they are still active. **Thanks** again	Knowledge-provider: Thanks

Developer to User 1.27 (10 Jan 2003)

The final example in this category was taken from the discussion boards. The exchange below was typical of the user to user provision of knowledge with the most noticeable feature being the initial turn. This first turn was clearly a knowledge-seeker query, as noted in Section 1 earlier in the chapter, with the exchange shifting to one of knowledge provision as another user responded and provided the knowledge sought. Another feature of these discussion board user-user exchanges was that they all

followed a three-turn pattern of knowledge-seeker query / knowledge provision / thanks.

Exchange H – Turn 1:

> *Is there anyone out there? ...*
> *So, if there is anyone out there with any advice on how best to approach the FND in a general sense (I've already read through the archive for background info), I'd greatly appreciate your help.*
> Knowledge-Seeker query from User 1.33 (23 Dec 2003)

Exchange H – Turn 2:

> *I think this question is a topic in its own right, so I'm going to start a new thread. Please go to the "Approaching the FND" thread to read my comments.*
> *This is a very common and important topic, one that has been discussed at length (seehttp://www.cty8.com/talandis/Categories/GEN/gen_index.html for a start.*
> *But, as each CP is unique, it always helps to discuss this again...*
> User 1.29 (26 Dec 2003 – 27 lines of advice followed) Knowledge-Provider – User Provision

Exchange H – Turn 2:

> *Thanks for getting back to me, J. I appreciate your advice and will try to avoid getting bogged down with the FND.*
> User 1.33 (27 Dec 2003) Knowledge-Provider – User Thanks

This final example saw the lexical chain "FND" followed throughout the exchange, and this repetition of lexical items appeared to be another feature of the discussion board exchanges.

So, the knowledge-provider category is defined as those users providing knowledge, with exchanges moving through a two to five turn discourse pattern, which included the turns of knowledge provision and thanks in every exchange. Chapter 6 will investigate how this category informs the model and principles of teacher development proposed in Chapter 2.

5.5 Minor categories

This section looks at the four minor categories: social; site feedback; site registration; and user introduction. Since the aim of the research is to investigate how users are supported by the site and how the site can meet their knowledge needs, these four minor categories were not seen as part of the primary data. However, feedback from users in both email discussions and questionnaires suggested that there was a definite discourse strategy in my developer emails, and that this strategy was extremely important in how the users reacted and contributed to the exchanges. The theory memos from the initial analysis noted the predominance of informal linguistic elements and the importance of these minor categories in developing the relationships between users and developer.

Therefore, I have decided to include the analysis of the minor categories here, so that I can draw upon it fully in the next chapter where I discuss the developer's discourse strategy. The section also allows me to demonstrate that the analysis covered every part of the email and discussion board exchanges and not just the segments categorised under the four main categories.

5.5.1 Social exchanges

The social exchanges were primarily aimed at facilitating communication and improving the professional relationship that was building between the developer and the user. However, they did not actually provide any data to support the main focus of the research and were, therefore, included under the minor categories.

The theory memos consistently saw the developer – user relationship in these exchanges as one between professional colleagues with the result of improved communication and a developing trust. This category divided eventually into the following sub-categories: opening; local reference; study; and closing.

The first subcategory, **Opening**, can be defined as:

The first lines in a message that lead-in to the main body.

This definition, arrived at after reviewing all the email examples from the 22 Group One users in 2002, meant that some subcategories originally named apology and thanks were reassigned to this subcategory, and those initially named introduction were fully subsumed under openings. Some of the segments were as short as one or two words.

Phil,	Social: Opening

From User 1.18 (24 Sept 2002)

Dear Phil, Thanks for your reply. I'll try to keep this one short.	Social: Opening

From User 1.10 (9 Feb 2002)

This last example demonstrated why some examples of thanks were naturally subsumed under openings as I moved away from a functional exponent approach to the linguistic analysis and moved towards a turn-taking approach to the categorisation.

The next example showed how I initially separated opening from other categories such as thanks and introduction.

Hi Phil,	Social: Opening
My name's R and I'm one of the many on .....,	Social: Introduction

From User 1.15 (17 Apr 2002)

However, it was clear that the two segments both led into the main message and did not require differentiation, so I settled upon the definition for the sub-category above, and this exchange was re-categorised as follows:

Hi Phil, My name's R and I'm one of the many on	Social: Opening

From User 1.15 (17 Apr 2002)

The next example showed how I initially had apology as a subcategory but, once I had finalised the definition above, these were merged as clear examples of opening:

Hi Phil, Sorry it's taken so long to get back to you but this is not my normal e-mail address, so I don't check it all that much!	Social: Opening ~~Social: apology~~

From User 1.12 (5 Mar 2002)

The examples above came from my initial analysis of the 2002 data, and the ease with which the 2003 email segments were included under this sub-category supported this sub-categorisation under discourse patterns.

Hi, I'm C and I've just started the MSc in teaching.	Social: Opening

From User 1.27 (3 Apr 2003)

Thanks Phil,	Social: Opening

User 1.24 (24 Jun 2003)

Hi D Sorry I'm only just replying	Social: Opening

Developer to User 1.17 (15 Apr 2003)

This emergent clarity in the sub-categorisation of social exchanges was also evident in the other sub-categories as detailed below:

The next subcategory, **Local reference**, can be defined as:

Any segment that refers to the user or developer's local situation.

This definition meant that those segments initially named work were fully subsumed under local reference. The following examples demonstrated that the major lexical indicators were the names of the cities or countries and references to weather or local events. I nearly called the category phatic communion or elevator talk as the examples reminded me of the small talk typical of lifts, and the function of the exchanges was similar; to improve communication and social relationships.

Hope all is well in sunny D	Social: Local reference

Developer to User 1.10 (26 Apr 2002)

PS - whereabouts in S are you? I spent a year near B and have lived in C and M as well :):)	Social: Local reference

Developer to User 1.16 (24 Aug 2002)

The first two examples above were typical of the segments with locations acting as lexical markers. I have reduced all locations to first letters to preserve the anonymity of the users.

J is going good for me. Just changed jobs and about to start work part-time at a University out here	Social: Local reference

From User 1.11 (27 Jan 2002)

This example indicated that a sub-category I had originally separated as Work in fact fell under this local reference sub-category and matched the definition perfectly. This was supported as I moved the segments initially labeled work across to local reference as below:

The Learner Independence SIG of TA (of which I'm co-chair and editor) is preparing a Newsletter of probably 8 pages to be put into all conference bags at the March Conference and distributed to members also.	Social: ~~Work~~ / Local reference

From User 1.09 (10 Jan 2002)

This was further supported by the ease with which I could categorise the 2003 data:

Hope all is well. I intend to visit D in Feb 2004 so hopefully we could meet up then. Until then if its ok I would like to keep in touch.	Social: Local reference

From User 1.17 (11 Mar 2003)

The next subcategory, **Study**, can be defined as:

Any segment that refers to the user's study with Aston.

I should note that the study sub-category was initially seen as a full category, but further user analysis indicated it was clearly subsumed by the social category. This was one of the clearest categories and needs little discussion as the examples below demonstrate. The lexical indicators were all forms of the word study and reference to the University, module or tutor names, and I include just three examples below.

Keep enjoying the study.	Social: Study

Developer to User 1.05 (27 Jan 2002)

Thank you for the suggestion re. the DL Module. I hadn't thought about it, but the idea is intriguing. ... (continues)	Social: Study

... I'm looking forward to J's visit in December and ... (continues)	

From User 1.23 (15 Nov 2003)

I am just, right at the beginning of the FND and trying to get my fingers into as many networks as I can to maximize support, cooperation and community as I go along.	Social: Study

From User 1.24 (1 Feb 2003)

The final subcategory, **Closing**, can be defined as:

The last lines in a message that round off the exchange bringing it to a close.

This definition, arrived at after reviewing all the examples from the 22 Group One users in 2002, meant that some subcategories originally named apology and thanks were reassigned to this subcategory. Standard endings to both formal and informal written exchanges, which acted as the lexical markers, can be seen in the following examples:

Regards M	Social: Closing

From User 1.20 (8 Oct 2002)

Sincerely, K	Social: Closing

From User 1.14 (24 Jan 2002)

BFN C :-)	Social: Closing

From User 1.12 (5 Mar 2002)

Cheers, J	Social: Closing

From User 1.04 (5 Apr 2003)

Keep in touch and thanks once again for the great tip :) Phil :)	Social: Closing

Developer to User 1.27 (4 Apr 2003)

Thanks for everything, J.	Social: Closing

User 1.29 (10 Jun 2003)

These four sub-categories successfully encompassed all the data. The move from speech act subcategories like thanks and apologies to the more context driven subcategories of local reference and study made the coding more natural and more closely reflective of the data and thought behind the emails.

5.5.2 Site feedback

The site feedback exchanges focused closely on the site itself as the vehicle of the research as reported in Chapter 4. These exchanges gave general feedback on the site rather than demonstrating any specific area of knowledge sought. The examples below should show the difference between knowledge-seeker turns such as, "Maybe you **could give me some advice** (....) before I start (....) the first module; **FND"** (From User 1.16, 22 Aug 2002), and site feedback turns like, "**Maybe changing** the colour for each of the subsections rather than blue for each screen" (From User 1.12, 5 Mar 2002).

The theory memos consistently saw the roles taken in these exchanges as a straight-forward website user-to-developer relationship with the result of an improved website. This category's turn-taking fell into a pattern of:

Developer details the plans for the site.

Developer requests feedback from the user.

User gives feedback on the site, both solicited and unsolicited, to the developer, or promises to get back to developer at a later date.

Developer responds to user - most frequently with thanks.

This allowed the category to be divided into the five turns of Development Plans, Request, Feedback (Promise) and Response (Thanks) although most exchanges followed a three-step sequence of request / feedback / thanks.

The **development plans** turn was defined as:

The developer gives details of changes to the site.

Originally there seemed to be two definitions based on the motivation for writing the plans. Namely:

to encourage users to contribute with their feedback

to lead-in to a request for feedback.

However, there was no evidence that this was necessary, and the final definition avoids stating the reasons since the shorter definition allowed the coding to capture all the examples encountered.

The **request** turn was defined as:

The developer requestsfeedback on the site.

The **feedback** turn was defined as:

The user gives feedback on the site or promises to do so.

The **response** turn was defined as:

The developer responds to the user's feedback on the site and invariably thanks them.

The first two examples below demonstrate all four turns:

Exchange A – Turn 1:

I'm spending the next month **revamping** the site so that it reflects more closely the needs of the AstonMSc participant, and have a couple of **specific questions** for you if you don't mind taking a couple of minutes to respond.	Site feedback: Development plans Lead-in to request

Developer to User 1.12 (27 Jan 2002)

Exchange A – Turn 2:

4. Is there **anything new** you would particularly like to me to post on the site when I do the **revamp**?	Site feedback: Request

Developer to User 1.12 (27 Jan 2002)

It was interesting to note from the data that the first two turns were both from the developer and often within the same email. I did consider merging the turns, but there was sufficient evidence of segments detailing the plans to the site without a request that I discarded this option.

Exchange A – Turn 3:

Maybe changing the colour for each of the subsections rather than blue for each screen. I thought it was a little difficult to keep track of where I was when I looked the first time. But I haven't had a chance to do any in-depth exploring yet.	Site feedback: Feedback

From User 1.12 (5 Mar 2002)

Exchange A – Turn 4:

I like the idea of changing colour for the subscreens or levels. I'll experiment with that as I revamp the site. I've got time now since the ftp won't let me upload ---- as they say 'every cloud has a silver lining'. **Thanks** again for your support and the detail of your feedback.	Site feedback: Response

Developer to User 1.12 (9 Mar 2002)

The second example below was an example of the first two turns separated by a number of months, with the second turn succeeding in getting specific feedback on the site.

Exchange B – Turn 1:

I am **looking into** setting up a **bulletin board** with threaded discussion groups based around posted papers. ... (continues) ... It's all been delayed at the moment as my web server provider has been awful over the last 6 weeks and I haven't been able to post anything, so I'm in the process of switching providers in May and the new provider gives me an excellent **bulletin board** option. So, here's hoping that by the end of summer I'll have the above discussion lists up and running with the 'chat' option there..	Site feedback: Development plans

Developer to User 1.10 (20 Apr 2002)

Exchange B – Turn 2:

You'll get another email from me later in the week asking you to check out the **revamped** site. Let me know **what you think** please - I value your opinion	Site feedback: Request

Developer to User 1.10 (21 June 2002)

Exchange B – Turn 3:

I've just had a quick fly through parts of it - it looks **great**! Seems more **cohesive/integrated**(?) than before, dunno why exactly, maybe the organisation is **clearer** and links are more directly 'linked'/**relevant**..? Didn't have time to look at everything (only **Study & Language** so far and not all of that), but esp liked your **'Maximising Student Writing'** paper, as well as the **Correction Worksheet, Futures**, etc. The **journal writing paper** was lovely and clear.	Site feedback: Feedback

From User 1.10 (27 Jun 2002)

Exchange B – Turn 4:

Thanks a million as always for all your **support** -- it is the constant contact from participants and site users like yourself that makes it all worthwhile and keeps the adrenalin flowing :):)	Site feedback: Response / Thanks

Developer to User 1.10 (28 Dec 2002)

The final turn above was an end of year thanks for all that user's input and feedback on the site rather than a separate thank you for the specific feedback in June. There were, in fact, eight short email exchanges between the two final turns above as the developer gave feedback on a couple of specific knowledge-seeker requests and the user was moving countries.

The next two examples are based on a direct feedback request without the lead in of website development plans.

Exchange C – Turn 1:

Hope you find the site useful and **let me know** if there is anything you want posted up there.	Site feedback: Request

Developer to User 1.15 (25 April 2002)

Exchange C – Turn 2:

I had a quick browse over your site and to be honest, it looked very **useful**. It's one of those that I wish I had a bit more time to get more into. But I shall endeavour to do just that over the coming weeks - along with the other 83 sites that I've bookmarked.	Site feedback: Feedback (Promise)

From User 1.15 (28 Apr 2002)

Exchange C – Turn 3:

Look forward to your feedback.	Site feedback: Response

Developer to User 1.15 (4 May 2002)

The second example below was a standard message sent out twice a year to all users as the site went through its six-monthly overhaul, and the user in this case has taken the message as a direct request.

Exchange D – Turn 1:

Keep your eyes open for **the latest philseflsupport.com update** :):)	Site feedback: Request / Development plans

Developer to User 1.29 (13 June 2003)

Exchange D – Turn 2:

This is J. Thanks for the message about your site's update. I checked it out, and all I can say is "it looks **great**!" Not much help, but really, it's fine. Since I'm trying to create a site of my own, I'm noticing details regarding design and layout. I can tell you favor a very basic & simple style. No graphics or fancy drop-down menus! ... (continues) ...	Site feedback: Feedback

User 1.29 (24 June 2003 – 14 lines)

Exchange D – Turn 3:

Thanks for all the positive feedback - does me the world of good before I go off on holiday tonight :):) You are right -- the lack of graphics and an all-text based site was a conscious decision based on feedback from participants who are still working with 486s !!!!!	Site feedback: Response / Thanks

Developer to User 1.29 (25 June 2003)

The final two examples in this category are based on receiving unsolicited feedback:

Exchange E – Turn 1:

Loved your web-page. It is **a God-send** for me. (...) very **helpful** stuff on your site. THANKS!	Site feedback: Feedback

User 1.28 (8 Apr 2003)

Exchange E – Turn 2:

Great to hear that the site is of help to you out there in C :):)	Site feedback: Response
I have four participants here in AD who are at roughly the same point in Foundations -- would you like me to **put you in touch** with them? Let me know	User introduction: Offer

Developer to User 1.28 (12 Apr 2003)

Exchange F – Turn 1:

After hearing you mention your site at the recent Aston weekend I thought I'd check it out. **Useful, impressive and large** are the three words that come to mind!	Site feedback: Feedback

From User 1.22 (30 Oct 2002)

Exchange F – Turn 2:

Thanks for the feedback D.	Site feedback: Thanks
Please let me know anytime you would like to see something posted.	Site feedback: Request

Developer to User 1.22 (1 Nov 2002)

It was interesting to see the thanks in the last example being followed by a request encouraging the user to continue the exchange. Maybe this was due to the initial feedback's unsolicited nature and part of the whole discourse strategy discussed in Chapter 6. This idea was supported as I looked at the other unsolicited example (E) which did not have a site feedback request but did ask for the user to respond in another category (user introduction). So, it appeared that the developer strategy aimed to continually encourage the user to respond rather than finishing the exchange.

5.5.3 Site registration

The site registration category fell outside the primary data set as the nature of the category was functional and practical giving detail on the growth in the number of site users in each group, which has been covered in Chapter 4.

This category divided eventually into a two-turn exchange as follows:

Registration, which can be defined as:

User registers on the site

Thanks & Confirmation, which can be defined as:

Developer confirms the registration and thanks the user for registering

This category was very different from others in that it had a specific purpose - user registration - which could only have a follow up of thanks and confirmation from the developer, and which had a clear relationship of new user to developer in the exchanges. I include just three examples of site registration exchanges below.

Exchange A:

Anyway, as your registration page isn't working, here are my details: Name: D Country: U Studying: Aston Masters Institution: ADN Areas of Interest: writing skills and more specifically spelling [surprise surprise] Email: -----@---------- Thanks!	Site registration: Registration

From User 1.22 (30 Oct 2002)

This email included a site feedback segment as well (see Exchange F, Turn 1 in the section above), and the developer responded to that feedback implying thanks and confirmation of registration rather than explicitly using the formal turn of this category.

Exchange B – Turn 1:

I got your name from the Aston MSc program. Please register me for the site. Thanks. A J Studying for MSc in TESOL, Aston University interests: sociolinguistics, J. learners, CALL	Site registration: Registration

From User 1.18 (24 Sep 2002)

Exchange B – Turn 2:

Thanks A.	Site registration: Thanks
You're registered on the site.	Site registration: Confirmation

Developer to User 1.18 (27 Sep 2002)

Exchange C – Turn 1:

I would like to have my information put on the database. JA J	Site registration: Registration

MSc TEFL with Aston University by distance learning Area of interest – TEFL	

From User 1.24 (31 Jan 2003)

Exchange C – Turn 2:

Thanks JA. I've got your data input done.	Site registration: Thanks / Confirmation

Developer to User 1.24 (1 Feb 2003)

5.5.4 User introduction

The user introduction category acted as a lead-in to the four main categories, but the introductory turns primarily provided data on site growth and the building of social relationships rather than the knowledge focus of the research.

This category divided into the following turns:

Offer, which can be defined as:

Developer offers to introduce other users,

(or) User offers to be introduced to other users

Request, which can be defined as:

Developer asks if users willing to work with another user,

(or) User asks if anyone is willing to work with them

Introduction, which can be defined as:

Developer / User introduces user (themselves)

Thanks, which can be defined as:

User thanks user / developer for introduction

It was interesting to see that there was only one instance of thanks, noted in the second example below, as user-user interactions seemed to take off naturally as a continuation of the introductions, and neither developer nor users saw the thanks as a required part of the exchanges.

The two examples below are typical of the exchanges that saw users brought together and, although there is a lot of data, I have decided to leave the examples in their entirety here in order to preserve the continuity of the exchanges for the reader.

Exchange A – Turn 1:

I have four participants here in AD who are at roughly the same point in Foundations -- would you like me to **put you in touch** with them? Let me know	User introduction: Offer

Developer to User 1.28 (12 Apr 2003)

Exchange A – Turn 2:

I would be more than **pleased to hear from others** who are working on the FND. This would definitely ease the feeling of isolation. Your help & thoughtfulness is greatly appreciated.	User introduction: Request

User 1.28 (12 Apr 2003)

Exchange A – Turn 3:

Would any of **you be willing** to exchange support with J? He's stuck out somewhere in the wilds of C and looking for someone on the Fnds module to share and care with. He's on Task 4 at present. Please let me know soonest so that I can give him the good news :) Thanks	User introduction: Request

Developer to User 1.23 and 3 other Aston participants (12 Apr 2003)

Exchange A – Turn 4:

By the way -- I have 4 teachers here in AD who have recently started the Foundations module and another teacher in C who is on Task 4. Would you like me to **put you in touch** with them?	User introduction: Offer

Developer to User 1.27 (12 Apr 2003)

Exchange A – Turn 5:

Cheers, Phil, that'd be great. I'm not in touch with anyone at the moment so **I'd really appreciate** it. Thanks a lot.	User introduction: Request

User 1.27 (15 Apr 2003)

Exchange A – Turn 6:

I'll ask them and get back to you shortly	User introduction: Offer

Developer to User 1.27 (15 Apr 2003)

Exchange A – Turn 7:

Linking you up as two MSc participants in C and C and both recently started the Foundations Module. Hope this leads to a brilliant study partnership :):) As soon as I hear from the AD bunch I'll send a similar email along	User introduction: Introduction

Developer to Users 1.27 & 1.28 (15 Apr 2003)

Exchange A – Turn 8:

Thanks R. J is based in C, C in C and R in AD. Hope this ends up as a great **international working group** :):)	User introduction: Introduction

Developer to Aston participant and Users 1.27 & 1.28 (15 Apr 2003)

The second example below was particularly interesting as the user gave me an idea of how a group, exchanging ideas and discussing away from the website, was successfully proceeding. The norm appeared to be that, once the introductions had been made, the group branched out on their own with the developer having no recourse to their exchanges or knowledge about how the interaction proceeded apart from verbal confirmation from those users in Abu Dhabi.

Exchange B – Turn 1:

If you like, **I can go through** my exchanges data and then contact CPs who were involved in earlier discussions and ask them to contact you. What do you think? A way to go forward?	User introduction: Offer
Give the word and **I'll contact** the other (some past) CPs	User introduction: Offer

Developer to User 1.29 (11 Jun 2003)

Exchange B – Turn 2:

Thanks for your reply and offer of help. ... (continues) ... Well, that would be great!. I've been in contact with several of the DL "regulars", and it's well known that I'm doing this project in this circle. ... (continues) ... someone could point me in a good direction by noting the general timeframe of some memorable thread.that would be good too. So, **anything you can do, Phil, is great**.	User introduction: Request

User 1.29 (11 Jun 2003)

Exchange B – Turn 3:

Leave it to me J **I'll go through** my exchanges this weekend and email those who were involved in the discussion to see if they will contact you directly.	User introduction: Offer

Developer to User 1.29 (11 Jun 2003)

Exchange B – Turn 4:

Wow. Way cool. **Thanks**, Phil!	User introduction: Thanks

User 1.29 (11 Jun 2003)

Exchange B – Turn 5:

I've contacted the three most vocal of past participants on the list and hope they'll give me the nod. The fourth on my list (M) has already been in contact with you and has participated in the discussion board thread you started.	User introduction: Introduction

Developer to User 1.29 (13 Jun 2003)

Exchange B – Turn 6:

Thanks, Phil. C has emailed me already and offered his help. Consider me helped! I really appreciate it.	User introduction: Thanks

User 1.29 (14 Jun 2003)

Exchange B – Turn 7:

I'm copying M into this message so he knows what I am saying and you have a direct click to his email. Of all the participants I know who have used the discussion board M is the one with the most practical ideas on archiving ... (continues) ... **M is happy to help out** and let you have whatever he has got. All you need to do is email him J. Thanks again M. Here's to an archived easily-accessible volume of exchanges :):)	User introduction: Introduction

Developer to Users 1.10 & 1.29 (15 Jun 2003)

Exchange B – Turn 8:

Thanks Phil, I'l email M. Perhaps I can get Ms data and put it on the web site I'm making.	User introduction: Thanks

User 1.29 (15 Jun 2003)

Exchange B – Turn 9:

Thanks to your help, I've also been able to collect TONS and TONS of extra data! M was especially helpful in this regard. I'm also meeting C online for a chat this afternoon. I would like Cs feedback on design/layout issues. Anyway, everything is on track.	User introduction: Thanks

User 1.29 (24 Jun 2003)

The final example in this sub-category was one of several where user interactions were set up with site users who were not part of the Aston control group.

Exchange D – Turn 1:

I'm copying myself at work on this email so I remember to reply again and **give you R's email** - she's the one driving the NLP Spelling Action Learning group in the college.	User introduction: Introduction

Developer to User 1.22 (1 Nov 2002)

This category was originally called user interaction but was changed after analysing the above examples, settling on the definitions and reviewing the roles taken on in the exchanges. The theory memos consistently viewed the relationship in this category as 'contact catalyst', 'net-worker connecting users' and 'contact provider' with the result of new professional networks being set up. The roles are all consistent with an introduction rather than interaction. The redefining of the category as user introduction also succeeded in responding to the argument that all the interaction on the bulletin board fell under a user interaction category. Most of the bulletin board exchanges were clearly under the categories of knowledge-seeker, knowledge-discusser and knowledge-provider. The change of category name to user introduction

meant that other bulletin board segments gave some clear examples of both introductions and requests for introductions such as the two below:

> *Is there **anyone else on the course** who is living in S. or near the B. area?*
>
> User 1.34 (23 May)

> ***I am a new member** to the DL archive and also the MSc course... Wishing you all (...) a merry Xmas...*
>
> User 1.33 (23 Dec 2003)

As noted, these user introduction turns quickly moved into the other categories of knowledge-seeker, knowledge-provider and knowledge-discusser.

The analysis of the four minor categories above leads into further discussion on the overall developer's discourse strategy in Chapter 6.

5.6 Summary

The analysis detailed in this chapter has seen eight distinct categories emerge, and four of these stood out as being directly related to teacher knowledge development. In the next chapter, these four major categories will be mapped onto the initial model of teacher knowledge development presented in Chapter 2.

The four minor categories were initially outside the primary aim of the research but, as happens so frequently in qualitative research, the data analysed pointed towards specific features of the developer discourse which needed further interpretation. The next chapter investigates in detail the features initially indicated by these minor categories resulting in the nine keys to effective web facilitation.

The analysis detailed in this chapter is extended in Chapter 6 as I use the analysis to further inform and extend the principles of teacher knowledge development suggested in Chapter 2. The next chapter draws upon the user reflections from their questionnaire responses in order to support this interpretation and grounds the final formulation of the principles in the email and discussion board data evidence as outlined in Chapter 4, Section 6.

Chapter 6 – The Interpretation:
An Expanded Model of Teacher Knowledge Development

In Chapter 2, I reviewed the literatures of knowledge, teacher education and web-training, suggesting that they shared a common trajectory in their movement from externalised, objectified conceptualisations towards social-constructivist ones. I then re-expressed the outcomes of this essentially epistemological discussion in procedural terms, by first articulating a set of principles underlying teacher knowledge development and then deriving from those principles a set of nine statements of practical advice for the building of such support sites as the one in focus here.

Chapter 6 now binds together, via detailed inter-textual links, which work from Chapter 2, the case study narrative (Chapter 4) and the analysis of data (Chapter 5). It examines the proposed model of teacher knowledge development and the six principles for website developers from Chapter 2, and draws upon the reflections of the users in the questionnaires (see Chapter 3, Section 2.7 and Appendix 2). The first section reviews how the case study and the analysis match and extend the model of teacher knowledge development, demonstrating its cyclical nature. The second section proposes a set of nine keys to effective web facilitation based upon the data analysed. Finally, a revised set of principles are proposed and discussed in Section 3. In each case, the principles, the statements of advice, and the attitudinal keys attempt to articulate in appropriately epistemological and procedural terms the ways in which this research has moved forward from the literature reviews in Chapter 2, while remaining true to the common trajectory of conceptualisation initially expressed in that chapter.

6.1 The model of teacher knowledge development expanded

The analysis in Chapter 5 indicates a widening of the cyclical model of teacher knowledge development introduced in Chapter 2 (Page 69) with an outer ring moving from knowledge-seeker, through knowledge-user and knowledge-discusser to knowledge-provider. It is suggested that the cycle is constantly repeated as our increased knowledge only serves to demonstrate to us what we do not know, so that we embark on a fresh cycle of knowledge discovery in an ever-widening circle of development. The diagrammatical representation at the top of the following page attempts to capture this continuous development.

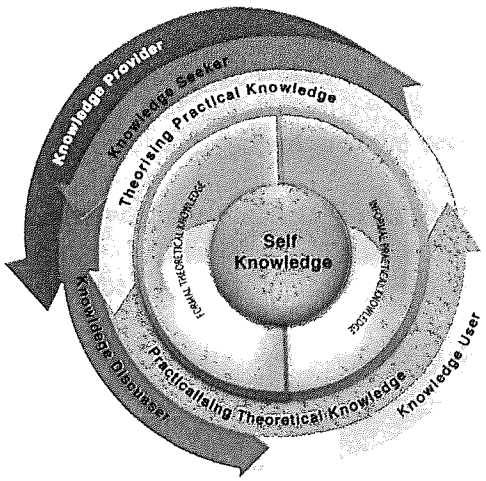


Figure 6-1: Model of teacher knowledge development – final

6.1.1 Knowledge-seeker

In the model of teacher knowledge outlined in Chapter 2, teacher knowledge starts with a core of self knowledge (Page 51) and an initial knowledge of the situation and context based upon experiential or informal knowledge (Page 55). As our experiential knowledge expands we begin to understand the gaps in our knowledge and seek to deepen our

understanding by exploring the theories that underlie our experience. This matches the definition of the knowledge-seeker category in Chapter 5 (Page 148) as those users seeking knowledge. This knowledge-seeker category mirrors the theorizing of practical knowledge in the model of teacher knowledge development (Page 58). We have an understanding of ourselves, our situation and teaching context, and we begin to explore how we can deepen that understanding through reading, professional workshops and further study. We are in effect beginning to theorize our existing practice and by seeking new knowledge we gain a better understanding of what we are doing in the classroom through research and reflection (Winkler 2001).

On the Diploma courses I tutor, I refer to the freeze frame in the classroom, meaning we should be able to explain why we are doing what we are doing at any given point in our lessons. This often requires depth of reflection and the seeking of new knowledge to better explain the theories underlying our practice. We are beginning to link our informal, experiential knowledge to formal, professional knowledge using the reflection and personal development model informed by Wallace (1991) and described in Chapter 2 (Pages 39 – 44).

Twelve of the fifteen respondents to the questionnaire saw themselves as primarily knowledge-seekers. For example, User 1.14 used the site "to access information for decision making" so "I guess I would fall into the knowledge-seeker category", User 1.24 "to search for papers to use in my assignment", and User 1.28 said his use of the site was "strictly one of enquiry and search for information". User 1.29 saw himself as "just a

consumer of services", User 1.22 said the site "provided me with useful links - I especially like the resources in Lexis e.g. the online corpora," and User 1.09 saw themselves as "a searcher on the site".

In these questionnaire responses a recurrent theme was the number of 'lurkers' or observers on the site. With an average number of hits per month well in excess of 10,000, it appeared that the needs of a small group of 31 teachers were mirroring the needs of many other teachers around the world. These 'lurkers' or 'observers' are what I would call passive monitors who privately extract the knowledge that they are seeking as they search the World Wide Web, including the website developed for this research. All I know about these lurkers is that they are seeking similar knowledge to that sought by the control group of Aston MSc teachers. Since I have no data from them, all I can state with any confidence is that they are knowledge-seekers.

The number of lurkers on the site and the discussion board surprised me although my experience of the Internet should perhaps have prepared me better for this outcome. Although this area was discussed briefly in Chapter 4 (Page 144), I wanted to reiterate my surprise at this point. I never believed that a site designed around the needs of 31 teachers doing further studies would produce 226 registered users and an average of 15,000 hits a month. This volume of lurkers also indicates that the website structure, which was built upon Group One user requests, matches the knowledge sought by a wide range of teachers. Salmon (2000:29) also suggests that lurking is "a natural and normal

part of CMC socialization" and website developers should encourage the practice as a first step for potential registered users.

Some of the Group One users, even though registered and within the focus group, saw themselves as lurkers. User 1.23 described herself as "an observer" causing me to wonder if we can look at lurkers and observers as another type of knowledge-seeker. User 1.04 noted that the site is "like the Aston discussion list. There are many lurkers," and User 1.22 wrote of his preference for the discussion board because "at least there you get to lurk first to know something about the topics / people". User 1.04 continued saying the site "provides a fantastic potential resource for those who do use it. Lurkers may also experience it positively, too... but not to the same degree as actual users".

This final quote suggests that the site users experienced the knowledge seeking to a greater depth. It implies that the users worked with the knowledge sought through reflection and further discussion with others, including the developer and other users. This understanding is derived from the analysis in Chapter 5 and appears to support Principle 1 that states teachers actively process the knowledge they receive (Page 70). In other words, as we begin to process newly received formal, professional knowledge we need to reflect further on its significance to both our existing situation and self knowledge. We begin to map the newly received knowledge to our existing knowledge schemata (Piaget 1950) and make unconscious decisions as to whether or not we accept or reject that knowledge for our teaching selves in the context we are working in. When we accept this knowledge, we either slot it into our existing schemata smoothly or we

have to adjust our existing knowledge schemata and understanding to encompass the new formal input (Kegan 1982, Rosen 1996). It is at this point that true change begins to occur in our professional selves.

This link between the knowledge sought and a teacher's development was highlighted by User 1.23 in her response to the questionnaire: "The links are really helpful because they provide quick and easy access to information I need for my studies. The links often lead me to follow up on references or new ideas that I find interesting. Sometimes the information I've found has really enlightened me and precipitated a pursuit of more knowledge in an area". User 1.04 also commented on how the site content was both "stimulating" and "challenging" as he described his attempts to match the knowledge required for the worksheet tasks to his existing knowledge structure.

The role of the site in promoting reflection was also raised by other users in their questionnaire responses. Some users felt that this was not the primary aim of the site. User 1.09 said that he felt "other things in my life promote reflection and development, and it's not the prime responsibility of the site to do such promotion work. I think the site facilitates reflection/development by virtue of its structure, easy access and contents, but the 'promotion' of reflection has already occurred before I access the site". Others disagreed and suggested that certain elements of the site fulfilled this aim. User 1.01 said that; "the Language Section promotes reflection and development because it creates an awareness of language within the teacher," and User 1.04 agreed saying; "the activities and language promote reflection".

Future development of the site needs to consider these responses and aim to ensure that the whole site develops reflective practice in the way that the sections mentioned by the users above do. Although reflection will always remain a primarily individual and private activity, collaborative work often provides insights into those reflections as discussed in Chapter 2 (Page 44) with reference to Knights (1985). The next section looks at the knowledge-discusser category as an example of collaboration and an extension of the model of teacher knowledge development.

6.1.2 Knowledge-discusser

The changes to our existing knowledge schema triggered by reflection on newly acquired knowledge are seldom complete until we have involved others. As we shift our schemata, we need confirmation from those professional colleagues around us whom we respect. So, we discuss how this new knowledge maps onto our existing cognitive knowledge map and decide whether or not the change we are considering for our schema is in fact compatible to our professional context. The role of professional discussion in the development of knowledge was discussed earlier with specific reference to Kuhn (1970) and, in teacher education, Johnson (2000). This section now examines how the knowledge-discusser category expands upon the model proposed in Chapter 2 to fully include these social constructivist views.

The focus on improved professional understanding in the definition of the knowledge-discusser category in Chapter 5 (Page 160) is compatible with these views and the description above. The number of turns seen in the data analysed and the constant

encouragement for the other party to continue the exchange also demonstrate an in-depth search for confirmation and understanding of changing knowledge structures.

The email and discussion board data analysed in Chapter 5 provided evidence of teachers questioning, discussing and reflecting, thereby supporting the second and third Principles posited in Chapter 2 (Page 70) and leading to the two principles being merged as described below (Page 255). Chapter 4 described the growth of the website, with the development of the lexis pages largely based on the input from User 1.10 as the best example from the data of an individual user's deepening understanding of a topic (Page 123).

Only two of the fifteen respondents to the questionnaire saw themselves as primarily knowledge-discussers with User 1.10 stating "I can only categorise my own (perception of my) emails to you - generally, 'knowledge-discusser' I think?" This was certainly confirmed by the analysis of that user's exchanges, and Chapter 5 included a couple of examples from our exchanges including one on the human element in web based communication (Page 165), which influenced the development of the nine keys later in this chapter.

This section now further explores the major issue raised by the questionnaire responses that clearly falls under the knowledge-discusser category – the concept of discourse community and whether or not philseflsupport.com represented a discourse community. This issue allows us to explore the reasons behind the arguably low number of

professional discussions found in the data and the petering out of many of the web based discussions (Page 163).

Wenger et al (2002) use the term 'distributed' communities of practice (CoPs) to refer to groups whose members meet online, and Stevens (2005:10) supports the assertion that "if teachers pursue professional development in the context of CoPs, they will work within models of constructivist learning environments, where scaffolding occurs among those in a shared zone of proximal development. Then, and perhaps only then, will they be in a position to apply these principles to their own blended classrooms and workplaces".

One of the questions that I most frequently noted in my journal was whether or not the users of philseflsupport.com could be considered a discourse community. I asked the users via the questionnaire and some of their responses indicated that for some of them at least we were indeed a community.

User 1.28 said that the site allowed him to enter "into the discourse community more easily". User 1.06 went further, going into his Masters files and looking for a definition of discourse community. "The IIC file page 1.28 lists Swales' criteria, all of which seem relevant to the site," he said.

Taking this on board I went to Swales (1990) and found the six criteria he uses to define a discourse community.

First, the discourse community must have a broadly agreed set of common public goals. Whether the site users met this criterion is disputable although we could argue that all active users are committed to supporting one another since they have registered with the site on the understanding that I can draw on their expertise if required. If we only consider the Group One users, then, we could demonstrate a common goal of attaining the Masters and using the site as one source of support.

Second, the discourse community has mechanisms of communication between its members. This criterion is undoubtedly met by the users of philseflsupport.com.

Third, a discourse community uses the above to provide information and feedback. This is another criterion our users definitely meet.

Fourth, a discourse community utilizes more than one genre. If we consider email and discussion board as two distinct genres then we would meet this criterion.

Fifth, a discourse community uses lexis specific to the community. I am sure that an argument could be made for some of the site terminology and discussions around the knowledge categories using a specific lexis, but it would need a far tighter knit group of users to claim that this is true unless we conclude that the professional lexis of TESOL covers this criterion.

Finally, a discourse community will have a threshold of members with suitable expertise. I believe that the users of philseflsupport.com can be considered as meeting this criterion if we look at the immense experience in the profession among all registered users. Therefore, we could, based upon the discussion here, conclude that we are a discourse community.

Other users were undecided or saw the community as more of a web. "I've never been in contact with any other users – only lurked on the discussion forum! It could be a web community, however, with respect to the discussion board I think of it more of a knowledge web really, with you at the centre (not that I'm suggesting there is anything arachnid about you!)" (User 1.03).

Yet others were adamant that we could not be considered a discourse community and went into considerable detail to explain their perception. Users 1.10 and 1.22 explained that they knew no one who used the site by name except for myself and, therefore, could not feel they were part of a community. User 1.09 gave a good analogy to the local library saying; "I think some users may form themselves into a 'community' and exchange ideas. But fundamentally, I think the site is no more a community than my local library is a community –in that we all visit for different purposes at different times with a different agenda in mind. Communities take more time and more commonality of purpose to emerge, and everybody who uses this site is just 'passing through'".

These latter comments seem to link into the notion of lurkers and perhaps explain how a lack of a community feeling is reflected in the number of lurkers. I initially thought that the amount of participation in the site might be linked to the feeling of community, but Users 1.10 and 1.09 were two very active users who acted as knowledge-providers. I also considered whether or not those active users who participated in both the site and the discussion board were a smaller community within a larger 'web'. However, the responses from Users 1.10 and 1.22 discounted this as both are registered in the two forums.

Nevertheless, the brief analysis against the criteria from Swales and the number of users who did feel part of a community mean that I could tentatively claim that the users of philseflsupport.com do form an online discourse community, which enables "the development of a supportive peer network" (Motteram & Forrester 2005:290-1). This was particularly important, I felt, since the acceptance of the users of philseflsupport.com as a discourse community meant that a defined group boundary for professional discussion was formed. This in turn reflected closely the restriction to the definition of the knowledge-discusser category to the "professional field", which is also compatible with the literature on professional communities referenced in Chapter 2 (e.g. Porter et al. 1990).

As noted in the analysis in Chapter 5 (Page 159), most discussions in the data fell under the minor social category. This could possibly be standard social practice whereby we tend to build trust socially before launching into the potentially face threatening forum of

professional discourse. The question of professional discussion moving on from social discussion and being linked to the discussion boards or needing chat room facilities was raised in previous chapters, but warrants further mention here especially in relation to the discussions above on the community of users and lurkers.

Professional discussion is based upon a mutual trust which has to be developed, partly through social exchange. As shown in the social (Page 188) and knowledge-seeker (Page 148) sections in the previous chapter, 2002 represented a first year when many users were cementing their relationship with the developer by restricting their exchanges to local reference, study and seeking specific knowledge. A further conclusion was that an email forum did not lend itself to discussion, so I assumed that the discussion board data would yield more examples of knowledge discussion. This, however, was not truly evidenced.

I would conclude that most professional discussion actually takes place in a face-to-face medium with colleagues at hand and that online forums are mainly used to gather knowledge quickly through direct questioning or lurking or to provide knowledge to others as a foray into professional discourse and potential publication without the risk of rejection. The data supported this conclusion and the questionnaire responses indicated that these conclusions could be well-founded, as does recent literature (Motteram 2005).

The questionnaires provided some feedback on the continued work of the groups formed by users introduced via the website. For example, User 1.28 wrote that their international group of users "... did not get off the ground. I think mainly because I am so busy and

really do not enjoy sitting at the computer for too long unless really necessary. The discussion archive by user 1.29 has been useful to get some of the finer points". Other users were more positive. "(Phil) did put me in touch with other participants, which was useful" (User 1.04). "I learned from your experience, and by getting me in touch with people who could help me, I was able to accomplish far more than I could have otherwise. For example, User 1.10, whom you put me in touch with, sent me boatloads of data. I still haven't gone through all of it. So, in a way, the success I had with the archive was due to your help. ..., and I've had contact with ... the guy who did that other archive" (User 1.29). This user continued, "People often don't realize the power of the accumulated wisdom there. I think the boards are great because they allow input from visitors to the site. It's a chance to get involved and take part in stimulating discourse". This user finally noted that "sometimes participants can support each other away from the forum. This happened to me, a bit. The forum is like the café where you meet, and then you take it from there". A bit more negatively User 1.22 agreed but felt that "in a sense it is an invitation to break away from the community by setting up a one-to-one line of communication". User 1.10 provides a nice conclusion to this discussion as he states in his questionnaire response that he will revisit the site "in hopes of making contact with 'like-minded' souls". These responses indicate the work done away from the site and tend to imply that much more discussion took place away from the site than on it.

The literature also supports the conclusion that most professional discussion takes place in a face-to-face context with several studies (Pearson 1999, Baym 1998, Foley & Schuck 1998, Dubrovsky et al. 1991, McGuire et al. 1987) cautioning "that CMC is not the ideal

medium for work that requires any kind of sustained discussion" (Eldred & Hawisher 1995:340). Harasim et al. (1993) even maintain that web discussion needs to be required of users rather than optional if it is to work effectively. One of the reasons for Harasim et al. (1993) suggesting that contributions to web discussions be a compulsory feature is that so many discussions peter out before reaching any kind of conclusion. This lack of a conclusion to many web discussions was evident in the data in this research as well as in other studies (Tolmie & Boyle 2000:121, Stacey 2001). Several reasons have been posited for this, but I would suggest, based on the data from this research, that the primary ones were the lack of a clearly defined task, the absence of a nominated chair and the availability of other discussers in a face-to-face medium to complete the discussion with the user.

User 1.10 tied the idea of professional and social discussion into the isolation of the distance learner saying; "I don't know how a site, in itself, can combat isolation because, after all, isn't it up to the people who use it to DO something with it, or each other, in this respect? I mean, it's the old 'take a horse to water' syndrome (same thing for the discussion boards). In the end, we can never MAKE anyone do anything, we can only hope to tempt, cajole or bully them into action" (capitalized emphasis in original); a view supported by Motteram & Forrester (2005:289). Nevertheless, there were sufficient users actively involved with the site in this research to suggest that it did provide some release from isolation. This was also evident in the way the knowledge available through the website was used, as described in the next section.

6.1.3 Knowledge-user

One of the key phases in the transformation of our knowledge structure is the practicalising of new knowledge as we confirm our beliefs in practice. As noted in Chapter 5, this phase usually occurs away from the website although there were sufficient segments of data that pointed to a knowledge-user category for its inclusion in our model of teacher knowledge development. The independence of this knowledge use was seen in the lack of an active developer role in the category, and the definition of the category demonstrates a direct parallel to the practicalising of theoretical knowledge in the model thereby supporting the fourth principle from Chapter 2 (Page 70) with its focus on action research in the classroom (Wallace 1997) and collaboration (Bartlett 1990, Edge 1992, Woods 1996).

The email, discussion board and questionnaire data gave some evidence of how the users researched, tested and examined their knowledge by:

Using the action research course links (User 1.04),

Quoting the content in research writing and website linking (Users 1.04, 1.10 & 1.29),

Using the content in their teaching practice (User 1.10),

Supporting their research studies (Users 1.01, 1.07 & 1.14), and

Using the site as their affective support mechanism (User 1.06).

This final use of the site as an affective support conduit was particularly noteworthy as it matched one of the primary aims of the site when it was initiated. User 1.06 did his

research from an isolated position as a sole expatriate on a small island. His research was based upon cooperative development at a distance and he saw the development of the website as an example of a similar project. He used the site as a motivational tool as he observed the site and my research develop despite less contact with the developer than many other users. In his questionnaire response, User 1.06 stated that he used the site as a bibliographical resource and, more importantly for him, was able to draw upon our email exchanges and make a comparison of our uses of highlighting and prioritizing. He felt my developer emails used "a similar communication strategy" to cooperative development and active listening. He saw this use of the knowledge on the site as providing him with "a source of affective support" more than anything else since the main outcome for him was a reduction in his sense of isolation.

Although the data that was categorised as knowledge-user came from just the seven users above, many of the exchanges with other users gave indications as to how they were using the knowledge of the site. This section now reflects on the research work of three other users to demonstrate this.

In his response to the questionnaire, User 1.22 gave a detailed 24-line breakdown of how he used the site. He saw the site as primarily supporting his research studies by helping him confirm his decision on which module to take next. Once he had decided, he then visited the site "with a purpose" to gain an overview of the content area and access to further resources. However, he also used the site and exchanges with the developer to inform the research behind a distance education website he developed for his studies.

User 1.22 was based in Abu Dhabi, and he used the email exchanges to set up a meeting to discuss the theoretical research I had done for this thesis and how it could be relevant to his studies. This move from a web based discussion to a face-to-face forum supports the conclusion in the previous section that much professional discussion will move away from an email or discussion board exchange if the opportunity arises.

User 1.23 saw himself as primarily "involved as a user" of the site. He used it as "a database" of specific knowledge to support his research and studies. In his questionnaire, he gave details on how he used the site to link into other SIGs and discussion boards and stated that he found the knowledge from the site "really enlightened me and precipitated a pursuit of more knowledge in an area". He gave his research on distance learning, lexical chunking and task-based approaches to teaching and syllabus design as examples. In this way, User 1.23 demonstrated implicitly his use of knowledge available on the site. This practicalising of theoretical knowledge (Page 59) was implicit in that he did not specifically state how he used the knowledge and gave his feedback in the questionnaire rather than in the email or discussion data that was analysed.

User 1.09 also saw his use of the site as primarily a support for his research studies but, unlike User 1.22 above, felt that he came to the site having "already found out the core of what I need to know before coming on the site". He said that the knowledge on the site "enriches, or deepens, or extends, or confirms what I know" and then "sets you off on a more individualised trail of exploration and expansion". He gave examples from his studies using the site's discourse section and links to second language acquisition

research. User 1.09 also described how he used the site to help structure his final dissertation. In this case and under this category, the main use of the site's knowledge was one of research support although User 1.09 contributed to the site's independent learning resources from his research, and he was primarily a knowledge-provider.

Of the seven users whose data provided evidence for the category, User 1.04 offered the worksheets on lesson planning, course book evaluations and independent learning as examples of content which allowed him to practicalise his theoretical knowledge. In his questionnaire, he described how he printed the worksheets to do by himself or with colleagues finding them "far more mentally stimulating / challenging than passively reading a column or journal entry".

User 1.29 described how the site helped him get oriented when he first started the Masters. He then continued by detailing the reading he did on teacher development for his research and offered a blow-by-blow account of his thoughts as he used the site. His next message said: "Ok, here's what I'll do: right now I need to come up with a DISS proposal for the LSU meeting at JALT next weekend. (...) I know almost nothing about writing a DISS, so I'm going to your site seeking guidance. I'll work with two windows open side-by-side on my computer (one with my browser (Safari), and the other with Word) and try to capture my thought process as I go through your site looking for useful info. I don't know how this will go, but what I'm aiming at is to capture what I'm doing as I'm doing it".

The attachment gave more insight into how users approach the site and work with it than any other available data, and for this reason I include it in full in Appendix 3. The user detailed his thought processes through a near two-hour exploration for further knowledge on writing dissertations. He described how he first narrowed his surf of the site by using the section headings to move from the home page to the Study - Reading & Research pages.

The user's sense of astonishment and delight that so much was available on the subject he was looking for was evident in his writing, especially when he found an article that met his specific needs. The article helped the user realise that he was not ready to write a full proposal yet and also provided him with a framework to outline his ideas for his up-coming presentation. Thus far, the user's description suggests that his main knowledge-user activity was one of supporting his research.

User 1.29 described how he bookmarked the article he needed for future reference and then browsed through the sample dissertations to gain an appreciation of the task in front of him and save other potential references for his research. His exploration continued but was now focused on references he could use in his teacher development research rather than the dissertation writing guide with which he began his surf. He concluded by expressing his satisfaction at finding what he came to the site for and his post session reflection suggested this narrow focus "greatly helped my experience". I can also conclude that, based upon this data, the user's main activity was one of supporting his research. However, when the full email and discussion board data from this user was

considered it was evident that he had used the site primarily as a point of contact to other users and the developer for help on his distance education research. His research was based on setting up an archive and his discussions with the developer covered a wide range of technical and research topics. So, his use of the knowledge available on the site covered all the activities noted earlier with a focus on website linking and the affective and concrete support of other users.

As previously discussed, much of this stage of the cycle occurs away from the site since it is practicalising what we have taken away, reflected upon and discussed. Whilst this section and the previous chapter have discussed and analysed specific examples of knowledge use on the site itself, especially where the practicalising of the knowledge has been research based, I would suggest that most teacher knowledge use takes place in the institution or classroom as research, lessons, materials and courses are prepared. I include the model here again for ease of reference before finalizing the discussion in this section.

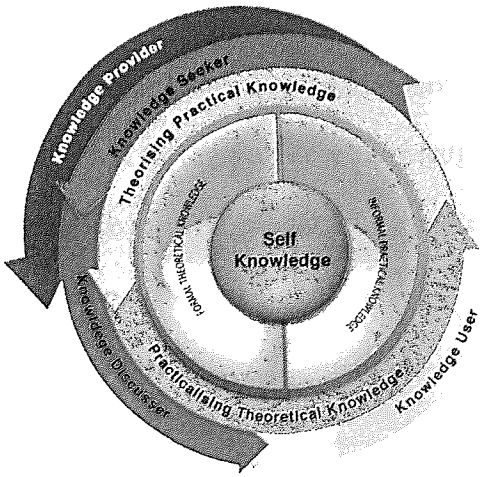


Figure 6-2: Model of teacher knowledge development – final

The previous reflection and discussion leads us into an experimental stage of knowledge-use as we practicalise our newly-forming theoretical knowledge through experimentation and action research in the classroom and institution. This practice then becomes part of our expanding experiential knowledge, especially as we continue to discuss and involve others in our research and experimentation. This continuous cycle from knowledge-seeker to knowledge-user and knowledge-discusser where all three are often occurring simultaneously results in increased understanding and growth in our professional knowledge. It is important to reiterate (see Chapter 2, Page 50) that this is a theoretical model and a diagrammatical representation of teacher knowledge development. It is not a direct reflection of reality, which sees teachers use different stages of the model simultaneously and apply different stages to different themes at the same time. For example, this thesis sees me at the knowledge provision phase theorising my practical experiences over the last five years. I am, at this stage of my career, also seeking knowledge on the WebCT learning platform as I work on putting a faculty appraisal course online. I am also participating in a knowledge discussion phase on writing journals in preparation for a conference presentation and am at the knowledge-user phase on a programme quality assurance project I am involved in. I have used myself as an example here to clearly demonstrate how all teachers process knowledge of multiple themes at any given stage of their working lives. The model is a theoretical simplification of an incredibly complex intermeshed process.

6.1.4 Knowledge-provider

Eventually, as our knowledge grows, we begin to realise we have something to offer the professional community and begin to act as knowledge-providers. The cycle does not end

here, since a natural continuation of knowledge provision is a realization of how much more we can add to our knowledge, so we begin to seek new knowledge in a process of lifelong learning. The cycle continues and grows. This description is supported by Winkler (2001:447) who describes the process from a starting point of theoretical reflection that "becomes a prerequisite for confrontation and 'metacognition', which according to Bruner (1996) and Day (1999) will enable teachers to become aware of their own assumptions of learning and begin to actively produce new knowledge about their own teaching".

The email segments and discussion board contributions that met the definition of the knowledge-provider category support the fifth and sixth Principles from Chapter 2 (Page 70), with their focus on teacher reporting and the institutionalization of knowledge, as the users share their knowledge with colleagues and other website users. This section now builds upon the analysis in Chapter 5 and explores how the users moved onto this stage of teacher knowledge development.

Seven of the 15 respondents to the questionnaire saw themselves as knowledge-providers sending assignments (User 1.07), "offering a few websites" (User 1.10), "helping a fellow student" (User 1.24) and telling the developer "about some sites I thought would be useful on his links page ... so I suppose I contributed a little" (User 1.04). User 1.06 said that, "as a classroom teacher looking to 'find a voice' I was very happy to receive the compliment of having a piece of my research included on the site. This is highly motivational". This contribution was solicited by the developer, and it appeared that some

users needed the encouragement of the developer to gain the confidence to move onto this phase and share their knowledge with others. The motivation expressed by the user above was echoed by others (see Chapter 5, Section 4).

Based upon the contributions of the Group One users, who were all studying on the Aston Masters programme and who had for the most part never had their work published, it appeared that the users were freely willing to offer resources they had found to other users (Page 184). Most users offered useful links to be uploaded to the site and, once the discussion boards were available, were prepared to offer advice and tips to fellow Masters participants. However, no user from Group One offered one of their articles for inclusion unless they were solicited by the developer. When I knew a user's research from our email exchanges, I often requested a contribution from them and all those approached expressed their surprise and delight. I would tentatively suggest that this is indicative of how we all felt when we first started in the profession and needed encouragement from a more experienced colleague to give us the confidence to submit our first article for publication be it in a journal or on the web. This suggestion is supported by the struggle of practitioner research for acceptance within the academic community (Yeatman 1996) as discussed in Chapter 2 (Page 47).

My solicitation of submissions does raise the question of authority and how these calls for contributions reflected on my overall role as developer. I attempted throughout the development of the website to act as a co-researcher so that I would not be viewed as an authoritarian figure following the research advice of Ristock & Pennell (1996:10) to

"minimize power inequities in all relationships, including the research one, through critical reflection and openness to criticism from others". The success of this attempt could only be determined by the users and therefore the question of authority was directly posed in the questionnaire.

The users were fairly unanimous in their view that there was some element of an authority presence, but many added they saw how I worked against it. User 1.28 saw the authority stemming from the service provided, "because you are offering a free service and advice, people naturally expect you to have authority". However, he added that, "in this case the authority seems to come not from above, but from below. In other words, because of your labours and investment into the site, you are accorded respect by CPs for what you have done". User 1.22 was more definite that I was the presence of authority, because "you are the one working on a Ph.D. which implies you have greater knowledge of the area". He went on to support this with reference to the discussion board exchanges and pointed out that, "you have the last word on all but one of the topics which ... suggests you have an authority different from other users". Even though I was acting in a developer role to try and maintain the discussion flow on the board and did not consider any authoritative action on my part, this response indicated just how differently the users could perceive this kind of intervention.

However, User 1.09 saw the concept of authority as irrelevant, "because you're also engaged in research, I would view you primarily in that role, as a co-researcher". User 1.06 agreed saying that, "your method of discourse certainly does not imply authority. I

see you much more as a facilitator". He went on to say that authority did not play a role in the site exchanges, because "my guess is that most people using the site would consider it a forum for peers, rather than any kind of tutor-tutee relationship". So, it appeared that I had partially succeeded in using a developer discourse that conveyed a collegial relationship.

The literature indicates the need for authority in communities, as well as the fact that it is always present whether we want it to be or not (Hübscher-Younger & Narayanan 2003, Simon 1980). Whilst this is true and supported by the differing perceptions of the users, I still maintain that the success of the site was due in part to the collegial discourse I attempted to maintain throughout the exchanges. Therefore, and based on discussions around authority, community and web communication, I considered it essential to include an analysis of my discourse in this thesis. This analysis saw the development of the nine keys to effective web facilitation discussed fully in the next section. Overall, I feel that I have been successful in creating a non-authoritarian presence since any authority perceived by the users was seen as central to the nature of my developer role.

The knowledge-provider category is the final phase in the cyclical model of teacher knowledge and is the key reporting element, which often strengthens our knowledge structure and teacher beliefs, perhaps moving them to the central core of our professional selves (Page 51). As noted previously, the work involved in providing knowledge to others also raises our awareness of other existing gaps in our knowledge and triggers a new cycle of teacher development as we begin to seek new knowledge to bridge those

gaps. Section 3 below reviews the principles proposed in the literature review (Page 70) and revises them based upon the understandings gleaned from the expansion of the teacher knowledge development model in this section. This expansion has been informed by the web-based approach of this research and deepens our understanding of the similarities between the three fields of literature reviewed in Chapter 2, especially in how the latest web education can be tied to theories of teacher knowledge and learning.

Before the principles are reviewed and revised, the following section investigates the developer discourse raised in the discussion on authority above in order to further inform the review of principles in Section 3.

6.2 Nine keys to effective web facilitation

This section draws upon the analysis of the minor categories in the previous chapter (Page 188) and looks at the developer's discourse strategy. Feedback from users in both email discussions and questionnaires indicated that this discourse strategy greatly affected how they reacted and contributed to the exchanges. The merged theory memos demonstrated that informal linguistic elements predominated in the functional segments such as openings and closings. There were also far more informal requests and queries made with only 13 instances of formality in requests (e.g. I would really appreciate) and 4 formal queries (e.g. you might be able to offer). This over-riding linguistic informality was compatible with the high proportion of email segments that were categorised as social, and the questionnaire responses stressed the influence of the social and other minor categories in developing the relationships between users and developer.

The theory memos consistently described the roles of the developer and user in the social categories as those of professional colleagues, with the exchanges primarily aimed at facilitating communication and building trust to improve that professional relationship (Page 189). The other minor categories, especially site feedback (Page 194) and user introductions (Page 202), continued the discourse strategy and attempted to develop trust and collegiality. The development of collegiality is seen as essential in the processes of teacher socialization (Johnson 2000) and in enabling teachers to have a voice in teacher knowledge research (Zeichner 1994). If the developer discourse has helped teachers to find that voice, as this section indicates, the nine keys to effective web facilitation become an important strategy in applying the teacher knowledge and learning principles discussed in Chapter 2.

In a discussion with User 1.10 on the human element in asynchronous web-based communication (see Chapter 5, Section 2, Exchange C, Pages 157-163), he suggested there were four elements to my discourse strategy that stood out: "you respond to all emails, usually very promptly ..., you do so in a friendly manner ..., you seem to be open to whatever ... and you respond concretely to requests or suggestions". In the continuing discussion he concluded: "What does all that add up to, other than treating people as serious human beings? And good communication skills - which means what? Being attentive to people". The analysis supported this user's opinion and demonstrated that the discourse strategy could be defined by nine key elements, as described below.

Key 1: Respond rapidly

I attempted to respond to all emails from website users within twenty-four hours, and whilst this proved impossible I did succeed in doing so in a high percentage of cases. This key to my discourse strategy was aimed at avoiding the experiences of other developers who had found that email exchanges often failed to move beyond the initial contact because it took too long to obtain a response (Castner 2000, Kamhi-Stein 2000).

Six of the seven respondents to the questionnaires pointed out the promptness of my responses and how this speed of reply encouraged them to continue their exchanges with the developer. Two of these (Users 1.14 and 1.23) also remarked on how helpful these replies were, especially given how quick the response was, and User 1.03 expressed how "impressive" he found this. There was also evidence in the email data, which supported the reflective feedback of the users.

Thanks for your typically quick response, Phil,	Knowledge-seeker: Thanks

User 1.03 (22 Nov 2003)

Thanks for the prompt response.	Knowledge-seeker: Thanks

User 1.17 (22 Sep 2002)

Hi Phil, That was fast. We may both be online now...	Social: Opening

User 1.29 (15 Nov 2003)

The analysis of the data in Chapter 5 also noted that one of the ways in which I ensured a rapidity of response was the use of hedging. This was particularly evident in those knowledge-seeker exchanges where the query required a detailed response that could not be given immediately (see Chapter 5, Section 1, Exchange C, Pages 145-147).

Key 2: Show interest

The phrase "being attentive to people" has already been flagged in the introduction to this section as crucial in building the trust needed for constructive professional communication. The literature on computer-mediated communication (Hiltz & Wellman 1997, Salmon 2000, Hertel et al. 2005) and journal writing (Mlynarczyk 1998, Quirke 2001a) has stressed the importance of building trust, sociability, emotional support, and a sense of belonging, all of which I would suggest are reached primarily by showing a genuine interest in the people with whom you are communicating. This key is based upon my experience in teaching, educational management and journaling which I have naturally transferred to my email and discussion board communications.

This transfer was evidenced in all the user exchanges analysed, which all fell, unsurprisingly, under the social category and pointed towards a clear strategy of building a closer relationship to the users by taking a genuine interest in their lives, studies and professional work. The four examples below were typical of segments that were scattered through the exchanges with every user.

Let me know how your lexis studies proceed	Social: Study

Developer to User 1.02 (30 Jan 2002)

Sounds like you've had an unbelievably busy year what with starting up your own school (how's it going?) and founding the YL SIG.	Social: Local reference

Developer to User 1.04 (29 Jan 2002)

Hope you've had a good mid-year break. Did you get away?	Social: Local reference

Developer to User 1.09 (27 Jan 2002)

Just read J's book on Continuing CD and wanted to compliment you on your section. A different angle, well described :):) Enjoyed it a lot	Social: Local reference

Developer to User 1.06 (9 Apr 2003)

The questionnaire responses also drew attention to the attitude of openness and genuine interest expressed through the emails with User 1.10 remembering phrases such as: "Hope all is well in sunny D", and User 1.14 prioritising the personal nature of the developer emails and the encouragement they provided. This personal nature was also evident in the mood maintained in the following key.

Key 3: Maintain a 'friendly' mood

The literature emphasizes the importance of the leader's role and attitude in computer-mediated communication (Hyde 2000, Riel & Fulton 2001, Hübscher-Younger & Narayanan 2003). In my website developer role, therefore, I attempted to maintain an upbeat, optimistic and friendly mood that mirrored my professional personality as closely as possible. This was done in many ways, for example through the use of smiley faces (☺) and colloquial terms.

User 1.10 notes that "beyond those famous (infamous?) smiley faces, just look at all the expressions of support, in fact, so much so it's almost over the top, no? ☺ ☺ BUT, point is, it works. Recipient definitely gets that 'warm feeling'". The first two examples below show how quickly I tried to set the tone with the very first replies to a new user, and User 1.10 in his questionnaire response noted this "personal style, which immediately broke the ice and established a level playing field".

Hi R Yup - remember you well.	Social: Opening

Developer to User 1.19 (30 Sep 2002)

Good to have you on board Phil :):)	Social: Closing

Developer to User 1.18 (27 Sep 2002)

I include a few examples below from different users and under different categories so that it can be appreciated that this was a standard feature of the developer discourse used in the email exchanges.

Meanwhile, please **feel free** to use [and abuse ☺☺] me for any support and input you need. That is the aim of the site ☺☺	Site feedback: Request

Developer to User 1.13 (29 Jan 2002)

How's the heavy summer of bashing out modules going? Where are you now? Much to go? Let us know and stay in touch	Social: Study

Developer to User 1.10 (5 Sep 2002)

Thanks a million for so much detail. I can't believe you get all that done between B and A ☺☺	Knowledge-provider: Thanks

Developer to User 1.09 (29 Jan 2002)

Thanks M You're a STAR :):)	Site feedback: Thanks

Developer to User 1.23 (10 Nov 2003)

Keep in touch and 'speak' soon Phil :):)	Social: Closing

Developer to User 1.24 (4 Feb 2003)

The friendly mood maintained by the language in both the emails and on the site was the feature most commented on by users in their questionnaire feedback. For example, "very

friendly, personal" (User 1.24), "I appreciate the more casual and less academic presentation" (User 1.28), "the language is just normal and conversational. This puts me at ease" (User 1.29) and "friendly, relaxed and encouraging tone" (User 1.03). User 1.22 noted that "it is friendly and direct... the language is chatty and inviting, and different from the dry academic tone of many university sites (for example). I think this makes the site much less intimidating. ... A chatty, human style that shows some warmth can help lower the defensive barriers and allow real change to take place".

Key 4: Respond in detail

From the outset, one of the main methods of providing support to teachers studying at a distance was to try and give them the detail which they were looking for in their knowledge search. In my detailed responses, I aimed to give the knowledge-seekers a personal description of my experience (Hammond 2000) and understanding as well as links to other resources. In this way, I aimed to provide the users with a narrative and sources they could reflect upon (Schön 1983, Wallace 1991) to further develop their research in line with the teacher development beliefs (Johnson 2000, Tsui 2003) that underpin the model outlined in Chapter 2 (Page 69).

The two examples below demonstrate the detail I went into when replying to specific queries and are fairly typical of the "concreteness" referred to by one of the users in their response to the questionnaire. The first one outlined my experience with action research guiding the user to the website's action research pages and describing the way in which they had been developed based upon that experience.

I'm a bit of an AR fanatic and part of my management success is down to the involvement of everyone in AR groups in my division I believe. I want to try and have the AR pages mirror the setting up of these AR groups in my institute although I'm not 100% clear on how that works. I was fortunate to be published in the AR book ...(...)... in the TESOL Best Practice Case Study Series and I'm really looking to some constructive criticism once they go up ... in return of course you can pump me for anything you need in that area ☺☺	Knowledge-seeker: Developer Response

Developer to User 1.04 after a query on my work with Action Research (3 Feb 2002)

The second example described my experience of starting out on my doctoral studies and gave the user my top tips based upon this experience and that of other colleagues.

I'm enjoying the PhD with Aston (...). **Best advice** I can give is make sure you have a clear topic in mind and that it is something that can keep you interested for the next 5-6 years of your life... then make sure you get the tutor you want and that you can guarantee that they will give good support from a distance --- I've seen a lot of those around me drop their PhD studies coz of lack of support and all envy my distance relationship with J --- but as I say took 3 years to get round to signing on :):) Just about half way through my second year Qualifying Report which I have to defend in January and this will set me up for the next 3-4 years of research and write up --- GULP	Knowledge-seeker: Response

Developer to User 1.11 after a query on doing a PhD (14 Oct 2002)

The final example demonstrated how I provided resources and links for user follow-up and also involved more knowledgeable colleagues in specific areas such as human resource management and business planning.

This took a bit longer than I thought as I had to run a couple of ideas past colleagues.	Knowledge-seeker:

The main texts on (ELT) Management which I found useful are: Handy – 1993 – Understanding Organisations White et al – 1991 – Management in ELT Everard & Morris – 1990 – Effective School Management Barrow – 1988 – Financial Management for the Small Business Kotler – 1991 – Marketing Management However, as I went through my notes and references I found that 90% actually came from Management Studies and I then drew from them as relevant parts related to my situation in ELT. If you let me know the area you are looking at, then I have agreement from my business faculty here at my institute to pass on the 'top' current references in that area: e.g. Human Resources (which was my main source), Business Planning, Reporting etc etc .. **Let me know** and I should be able to get back to you in a couple of days. Meanwhile, you might also find the following 3 websites interesting. http://pers-www.wlv.ac.uk/~le1969/msig/ the IATEFL SIG site which is also linked to my website http://www.surrey.ac.uk/ELI/managed.html ELT Management dissertations from the University of Surrey (some nice stuff here) http://www.nceltr.mq.edu.au/resources/eltmanagemnt.html nice list of resources **Hope this all helps.** Sorry for the delay in getting back to you, but I did want to set up a reliable follow up if you need any Management specific references.	Request

Developer to User 1.17 in response to a query on ELT Management resources (30 Sep 2002)

The detail given in these three examples was a regular feature of my responses and mentioned by many of the users in their questionnaire responses. For example, User 1.10 said that the emails were "always responsive – often much more than expected in terms of advice / interest in my projects and ideas". The other data segments analysed and interpreted in this chapter and the previous one also demonstrated that the three examples above are typical of the detailed nature of the developer responses.

Key 5: Empathise

The personal experience descriptions that guided my responses in the key above were directly linked to the ability to empathise with the site users and explicitly transmit this empathy. The literature indicates that empathy is central in professional development relationships (Noddings 1984, Golombek & Johnson 2004) and, wherever possible, I related the user's difficulties or situation to my experience, and I was pleased to see this reflected in the questionnaire responses from the users, with User 1.07 stating that "Phil tried to build a feeling of sitting in the same boat".

The three examples below demonstrate how I linked my experience to what I knew about the users with expressions such as: "I know how you feel", "See – you're not the only one", "I was there", and "When we did our Masters", which would stress the "our" for comparison to the current Masters study of the user.

I know how you feel about recruitment and donning the general's cap having been in ELT recruitment for ten years and in management positions for just as long. I find the secret is to never stop teaching yourself, lead by example and never ask anyone to do what you wouldn't do yourself – that way the general's cap is one which says – hey I'm doing it so you can follow … I don't know what you think, but it works for me and I've got 70 teachers in my division at present ☺☺	Social: Local reference

Developer to User 1.04 (3 Feb 2002)

The best advice a tutor once gave Phil 'the waffle' Quirke, was to reread every paragraph I wrote as I finished it and delete everything that didn't directly relate to the question being addressed. Being a bit critical I kept a full version and a trim version … I used this technique in my dissertation which ran to 19,800 words … the full version	Social: Study

was 45,000!!! See – you're not the only one ☺☺	

Developer to User 1.10 (23 Mar 2002)

When we did our Masters we certainly let our feelings known and I do believe that it helped future visits which became more clearly fixed with an agenda, timetable of input sessions etc…	Social: Study

Developer to User 1.13 (29 Mar 2002)

PS - How's life in M these days? I was there for 6 months back in the 80s and still have fond memories of one of my favourite world cities :):)	Social: Local reference

Developer to User 1.31 (19 Nov 2003)

This use of language to empathise those entering into exchanges with the developer appeared to be effective based upon the reflective feedback from the questionnaires. User 1.06 said that "it brings the visitor to the site 'closer' to the material being discussed through affective support. This atmosphere is conducive to personal development".

User 1.28's response to the questionnaire is used to aptly conclude the description of this key when he stated: "I especially appreciate that Phil … lends a sympathetic ear… It is important that someone (Phil) has insider knowledge, having 'run the gamut', himself, but is at the same time 'one of the lads'".

Key 6: Ask frequent questions

In Chapter 5 (Page 193), I noted my use of questions to continue exchanges by continually encouraging the user to respond. I have long experienced the power of questions in developing communication through my work on journals (Quirke 2001a),

and the use of questions in the development of knowledge has been traced back to Socrates (see Chapter 2, Page 26).

The literature on teacher development has numerous references on how questions can best be used to promote deeper reflection (Williams & Burden 1997, Jasman et al. 1998, Winkler 2001). I drew upon all of these as well as my natural curiosity to ensure that I used questions throughout my exchanges in all categories and with all the users as the examples below demonstrate.

2. Is there **anything new** you would particularly like me to post on the site when I do the revamp?	Site feedback: Request

Developer to User 1.13 (27 Jan 2002)

1. **Would you like to write** something on cooperative development for the site? Or let me post something you have already written?	Knowledge-provider: Request

Developer to User 1.12 (27 Jan 2002)

Can you be more specific about 'the units in the Foundation Module' that you want **key reading** for? Or are you just looking for those **books** I'd actually splurge on at this very early stage? Let me know and I'll get back to you with my top 10 ☺☺	Knowledge-seeker: Response

Developer to User 1.01 (3 Feb 2002)

When you say you've just started, are you still on the Foundations module? Where are you teaching?	Social: Study

Developer to User 1.27 (4 Apr 2003)

These examples were chosen as they demonstrate that the strategy of asking frequent questions was used in every category to encourage response so that the discourse and

contact could continue and allow a closer relationship between the user and the developer to be built. By having every email response include at least one direct question, I attempted to ensure that the emphasis was on the users continuing or ending the exchange. User 1.06 pointed out that this "questioning invites participation" tying this strategy into the next.

Key 7: Encourage contributions and participation

The website was set up to support teachers as they developed in their profession through further studies. In order for this support to remain true to the collaborative and collegial nature of teacher knowledge development (Bartlett 1990, Woods 1996, Johnson 2002), it was essential to openly and continuously call on the contributions and participation of the users. I attempted to do this through the language of the website, the use of discussion boards and continual encouragement in the email exchanges for users to contribute.

Users commented on how these requests to contribute boosted their morale and gave them a real sense of ability (1.06), and "how the mixture of site and personal email encouraged contribution" (User 1.07). User 1.22 found that the "emails are quite effective at encouraging participation because they are personalized (even if only addressed to me) and 'here and now' as opposed to a webpage which is 'there and always'". This boost in confidence ties into the model of teacher knowledge development as users who often considered themselves still seeking new knowledge were encouraged to share their work and research as knowledge-providers. This acceptance into the profession as equals by

someone they saw as knowledgeable clearly boosted confidence and encouraged further development.

The four examples chosen below demonstrate how I tried to ensure that the requests were specifically made based on the perceived strengths of the user and work and research previously discussed in the email exchanges.

2. **Would you like to write** something on cooperative development for the site? Or let me post something you have already written?	Knowledge-provider: Request

Developer to User 1.12 (27 Jan 2002)

3. Would you **like to write something** for the Learner Independence page on the website? Or let me post something you have already written?	Knowledge-provider: Request

Developer to User 1.09 (27 Jan 2002)

3. Would you like to **write something** or submit something you've already written for the lexis page of the website?	Knowledge-provider: Request

Developer to User 1.10 (27 Jan 2002)

Please let me know if you would like to **design a page** I could post on my site – I'd love to include it :):)	Knowledge-provider: Developer request

Developer to User 1.06 (8 Nov 2003)

It was also interesting to note that some users (1.14) felt that the language of the site with phrases like "Just email me" encouraged participation (see Chapter 4, Page 125). User 1.23 also noted the similarity between the emails and the user-friendly and conversational tone of the site that invites participation. He highlighted "words like, 'welcome' and

'support,' and introductions like, 'a *simple* introduction...,' 'an *interesting* interview...,' 'A *nicely worked* site.' The tone is upbeat and encourages the reader to proceed".

The development of the site based on user input was evidence in itself of the success of this key, and it was satisfying to see this perception confirmed by the user responses to the questionnaires.

Key 8: Solicit comments and opinions

The encouragement to contribute and participate was supported by the solicitation of comments and opinions from the users. These were an integral part of the developer discourse strategy in almost every email sent since the whole goal of the website as the research vehicle was to allow it to develop based upon user needs. This key aimed to ensure that I would receive regular feedback and suggestions.

Previous action research into my classroom teaching practices had convinced me of the effectiveness of involving all participants in planning decisions through feedback (Allwright & Bailey 1991, Head & Taylor 1997, Quirke 2001b), and I continued this belief into my teacher education and website development work. This key was a direct result of those previous experiences and the volume of feedback received (see Chapter 4, Page 134) was an indication of the success of this approach.

The first two examples on the next page were general calls for feedback.

Please let me know anytime you would **like to see something posted.**	Site feedback: Request

Developer to User 1.22 (1 Nov 2002)

Keep in touch and **let me know** how the site can best support you.	Site feedback: Request

Developer to User 1.15 (25 Apr 2002)

The next two examples were typical of those which built upon earlier suggestions or comments and asked specifically for the user's opinion on how this idea could be developed for the site.

This I like as it would hopefully give other CPs a mass of ideas for their various assignments as they begin a new module... **what do you think**?	Site feedback: Development plans Request

Developer to User 1.14 (8 Feb 2002)

Keep in touch - **how do you see** me adding this kind of info to the site?	Site feedback: Request

Developer to User 1.11 (14 Oct 2002)

The final example below was the standard email sent to all users asking for feedback on their use of the web site over the previous years.

I'm closing down the data collection on my PhD, and I was hoping you could **help me out** by completing the attached questionnaire.	Site feedback: Request
Thanks a million for your support over the last three years. My Doctorate wouldn't be where it is today without your input. **Thanks** again and looking forward to your responses :):)	Site feedback: Thanks

Developer to User 1.07 (8 Nov 2003)

As User 1.14 stated in his questionnaire response, "you are so very open to feedback... you listen to suggestions and implement those which would help the user base," and User 1.10 noted that "you're continually asking for – and responding to – feedback and requests for specific things".

User 1.09 stated that "the emails are good at soliciting people's opinions/suggestions. The news updates have a very positive tone. I can't think of any exact examples, but these are two areas where participation is warmly encouraged". This indicates how intimately intertwined this key is with the previous key of encouragement to contribute and participate.

Key 9: Express support

This final key of expressing support was central to the whole discourse strategy and the foundation guiding the other eight keys. As the aim of the website was to support teachers doing further studies, every developer email attempted to stress the importance of the support the site was trying to give. The three examples below move from the specific to a more open and general statement of support.

I like the sound of the Action Research project on getting the most from Arab students' **memorization skills** ... A good couple of assignments could look into that ☺☺	Knowledge-discusser: Reply (with encouragement)

Developer to User 1.01 (8 Feb 2002)

Hope this helps. Happy to go into a lot more detail when you need it.	Knowledge-seeker: Response

Developer to User 1.13 (15 Mar 2002)

Keep in touch and **let me know** how the site can best support you.	Site feedback: Request

Developer to User 1.15 (25 Apr 2002)

One user (1.07) added in his questionnaire response that it "was very encouraging to see how a real participant set up a system of support and thus encouraged me to keep on track... I felt supported by Phil". The examples below show how many other users expressed their thanks for the support provided by the site through the email exchanges.

Thank you once more for your support and your encouraging remarks when I felt so demoralized.	Knowledge-seeker: Thanks

User 1.13 (13 Aug 2002)

However, I want **thank you** for your help this year.	Knowledge-seeker: Thanks

User 1.14 (15 Jan 2003)

Thanks for all your help Phil. A bit of a God send you is!!!	Knowledge-seeker: Thanks

User 1.17 (1 Apr 2003)

Thanks for everything. J	Social: Closing

User 1.29 (10 Jun 2003)

It was gratifying to see these thanks for the support provided by the site and the email exchanges echoed in the responses to the questionnaires sent out.

> *You've already provided something unique and useful with the site (and your participation with users), which is quite an achievement!*
>
> User 1.10 (Questionnaire)

> *Just thank you for all your help*
>
> User 1.27 (Questionnaire)

I think you make a point not to lord it over on people. You always try to be of service. You can focus on my gratitude for such a useful support

User 1.29 (Questionnaire)

The keys above indicate a discourse strategy by the developer based on the principles of users as co-developers and the developer as a supportive resource. This discourse strategy therefore aimed to apply the principles posited in Chapter 2 (Page 70) by tying together advice from all three fields reviewed in that chapter, and it resulted in the use of an informal language that, in the words of two users, "avoided the academic tone of most university sites" whilst "maintaining professionalism".

This developer discourse was described by one user (1.10) as giving "the sense of having a conversation" with "the give and take" that that entails, and a discourse that, as I noted in my theory memos, "possibly supersedes the categories". The feedback from the users noted above indicates that this discourse strategy appeared to meet its aim of supporting the users through the constant application of these nine keys to effective web facilitation.

6.3 The principles revised

The focus of this research has been on the patterns of teacher knowledge development and how these can inform a set of principles and practical advice statements for the development of teacher study support sites. Chapter 3 (Page 85) determined the centrality of language and the primacy of email and discussion board exchanges. Chapter 4, Section 6 (Page 143) then confirmed how these were linked to the principles tentatively proposed from the literature review in Chapter 2 (Page 70). The case study, analysis and interpretation chapters described four specific categories in the development of teacher

knowledge. These categories now allow us to revise the principles posited in Chapter 2 with some confidence and with the explicit difference that the original Principles 2 and 3 have been merged reducing the total number of principles to five.

Principle 1

Knowledge-Seeker: Teachers actively seek knowledge to confirm, support and extend the work they do in the classroom.

This research focused on email segments that requested knowledge and the website structure built upon user requests. It demonstrated that the teachers involved continuously looked for a variety of knowledge sources that were directly pertinent to their teaching personas, their teaching contexts and their research interests. It confirmed that this principle should reflect the knowledge-seeker role which triggers the processing referred to in the wording of Principle 1 in Chapter 2 - *Teachers are active processors.* I claim that an active processor role is one that permeates the whole model at every stage. It is not restricted to a specific principle but is a role that is at the core of inquiring, reflective teacher development. The first principle is therefore revised to focus upon the knowledge-seeker role from the categories that emerged in this research.

Principle 2

Knowledge-Discusser: Teachers question, share and discuss the change process and their reforming knowledge structure with a 'knower' and / or others in order to adapt their existing knowledge structures and cement their beliefs.

The email and discussion board data analysed in this research provided evidence of teachers questioning, discussing and reflecting upon the knowledge received. The data demonstrated that teachers discussed their newly informed knowledge with colleagues in their teaching context, with the developer and with other users. The research also indicated that individual reflection could only be voiced in discussion and communication with others. Therefore, the principles should focus upon the elements of teacher knowledge development which can be evidenced in the categories that emerged from the data. This means that reflection is another integral part of the whole model rather than a distinct principle as indicated in the original model (Page 70). Every principle is therefore re-worded where necessary in such a way that reflection must have occurred for the principle to be followed: *question* in this principle, *actively* in Principles 1 and 3, *realise* in Principle 4, and *aware* in Principle 5. The second principle in the original model is thus revised to focus upon the knowledge-discusser role from the categories that emerged in this research and, thereby, to focus on the voicing of internal reflection. This principle therefore incorporates both Principles 2 and 3 from the model posited in Chapter 2, Page 70, and it ensures that the web education field is more closely tied to the theories of teacher education, knowledge and learning reviewed earlier.

Principle 3

Knowledge-User: Teachers actively research, test and examine their reformed knowledge structure in different situations both individually and in collaboration with others.

The data provided examples within the email exchanges and discussions of how the teachers worked with the site to discover knowledge and then use that knowledge as they actively researched, tested and examined their developing understanding. This principle was supported by the evidence and required no revision.

Principle 4

Knowledge-Provider: As teachers become more confident in their beliefs and realise they have something original to offer, they look for ways in which to share their knowledge with others thereby becoming initiators and knowledge-providers in their own right.

This research provided data in the form of email segments and discussion board contributions that demonstrated the users sharing their knowledge with others through direct contact with other users and through the provision of material to be uploaded to the site. There were clear examples of knowledge provision from a good number of users and many of those referred to the confidence they felt, which convinced me to include this user perspective in the wording of this principle. The principle now details the increase in confidence and the accompanying realization of being able to offer something to the profession that teachers seem to require to move into this phase of their development.

Principle 5

The Knowledge Cycle: As teacher knowledge develops, teachers become more aware of other gaps in their knowledge and begin the cycle again. This knowledge cycle is driven

by the continuous theorizing of practical knowledge and practicalising of theoretical knowledge.

The email and discussion board data, as well as the evidence of website growth, provided evidence of teachers acting as both knowledge-seekers and knowledge-providers. The data also demonstrated teachers working together to extend and deepen their newly formed knowledge structures.

In effect teachers are knowledge-seekers, knowledge-discussers, knowledge-users and knowledge-providers every day of their professional lives. Neither knowledge nor the model is ever static as we continually collaborate, research and work towards extending and deepening our understanding of the profession and the subject we teach.

The five principles together act as a description of the full model of teacher knowledge development, bringing out the continual cycle created through the theorising of practical knowledge and the practicalising of theoretical knowledge. They also tie together the three fields of literature reviewed in Chapter 2 by drawing and focusing upon the similarities between them. The research has provided evidence of teachers as website users demonstrating each of the phases in this developmental cycle. It therefore appears that where the process is detectable the analysis holds although we need to recognise that the process is not always in evidence in examples such as those of the lurkers. I would maintain that the claims here are applicable to all teachers but must admit that there is no evidence provided to support this for lurkers.

Figure 6-3: Model of teacher knowledge development – final

These five principles then allow us to posit the following statements of practical advice for the development of educational support sites. Based upon the research, the nine statements in Chapter 2 have been merged and adapted to more closely reflect the principles of teacher knowledge development above and the similarities between the three literatures reviewed whilst simultaneously incorporating the keys to effective web facilitation.

Statement 1:

Build, develop and extend the site based upon input from the users of the website.

In order to do this effectively you need to implement Key 8 (solicit comments and opinions) by frequent and consistent use of Keys 2 (show interest), 3 (maintain a friendly mood), 5 (empathise), 6 (ask frequent questions) and 9 (express support). In this way you can ensure that your website meets the knowledge-seeker needs of the users.

Statement 2:

Ensure the website asks questions, sets tasks to be completed and challenges the users of the site.

In order to do this you should use Keys 6 (ask frequent questions) and 7 (encourage participation) as well as Keys 4 (by posting the detailed responses as web pages) and 8 (solicit comments and opinions). This should ensure the site is fulfilling the aim of promoting reflection throughout the model of teacher knowledge development.

Statement 3:

Give the users of the website as many avenues as possible to collaborate and interact with the site, the developer and other users.

This can be done through the full use of discussion boards and chat room facilities as well as regular emails that ensure contact to the developer is facilitated. To do this use Key 7 (encourage participation) by continually and proactively employing Keys 1 (respond rapidly), 3 (maintain a 'friendly' mood), 4 (respond in detail) and 9 (express support). In this way you can give those users feeling isolated a sense of support and an avenue to discuss their new developing knowledge. Thereby, you can meet the knowledge-discusser needs of users even though many of them will, in all probability, find other avenues for discussion away from the web and within their own context.

Statement 4:

Build links into the website which give users access to forums where they can put their newly acquired knowledge into practice.

These links could include sites such as web-based learning platforms like WebCT, survey sites like Survey Monkey (http://www.surveymonkey.com) and specific study sites like AEROL (http://www.scu.edu.au/schools/gcm/ar/areol/areolind.html) on action research training. To ensure the links are relevant to the website users, apply Keys 7 (encourage to contribute) and 8 (solicit comments and opinions) backed up by Keys 2 (show interest), 4 (respond in detail) and 5 (empathise), and especially Keys 6 (ask frequent questions) and 9 (express support). In this way your website can act as an avenue towards offering connections to support the knowledge-user needs of the teachers who access the site.

Statement 5:

Encourage users of the website to contribute their research, papers and potential publications.

To do this make constant use of Key 7 (encourage to contribute) whilst proactively maintaining the deployment of Keys 2 (show interest), 3 (maintain a 'friendly' mood), 5 (empathise), 8 (solicit opinions) and 9 (express support). In this way the website can act as a potential outlet for the knowledge-provider needs of the users as they grow in confidence.

Statement 6:

Maintain the cycle of knowledge development by keeping in close and frequent contact with the users of the website.

To do this, you will need to employ all nine keys to effective web facilitation, and aid the teachers who use the site to meet the final principle of knowledge development.

These statements and the incorporation of the nine keys into their description are the result of the web-based research that was this study. They have drawn heavily upon the web literature reviewed in Chapter 2, Section 4 and are informed by the five reworked principles whose basis was not only the analysis and interpretation of the data but also the theories of teacher knowledge and learning. The revised model in this chapter, therefore, supports the similarities drawn between the three literatures reviewed in Chapter 2, deepens our understanding of those similarities and provides further evidence that brings the three fields together.

6.4 Summary

This chapter is the core of the thesis and is where all the preceding chapters and the three fields of literature reviewed in Chapter 2 have been tied together. The principles for teacher knowledge development have been revised to reflect the cycle that emerged from the data analysed with the model extended to reflect these changes.

We now see a model which reflects an ever-widening cycle of development with the knowledge of self at the centre upon which everything else is based. This knowledge of

self ties together our informal, experiential and practical knowledge from context and the theoretical formal knowledge of our profession which we continually seek to extend by theorizing our practice and practicalising our theory. The outer circle, taken from data analysis and interpretation, demonstrates how this works in practice with teachers continually seeking knowledge to better understand their classroom practice, and then vocalizing the reflection on that knowledge through discussion whilst using it in practice. The final stage sees the confident teaching professional providing their knowledge to others whilst they continue to better understand their own practice in an ever-widening cycle of teacher knowledge development.

The chapter then looked at nine keys to effective web facilitation which supported the revised statements of advice for website developers. These statements of advice are now informed by the model of teacher knowledge reflecting the five principles of teacher knowledge development. The table at the end of this chapter illustrates how the principles, statements of practical advice and keys to effective web facilitation are related. It is a simple tabulation but allows us to see how a developer's actions (represented by the keys column on the right) can create a website support structure (represented by the statements column in the centre), which is based upon sound theoretical principles of the development of teacher knowledge.

This research has provided an expanded model of teacher knowledge development based upon five theoretical principles that reflect the ever-expanding cyclical nature of teacher learning. The research has provided evidence for each of the principles through the

analysis and interpretation of the data drawn primarily from user email communications. The five principles outline four clear phases of development from knowledge-seeker through knowledge-discusser and knowledge-user to knowledge-provider. It should once again be stressed that these phases are not necessarily linear and are likely to occur simultaneously throughout our careers as we continually reflect upon and process newly received knowledge. The research has also provided a series of six statements of advice for developers of teacher support sites. These statements are grounded in the theoretical principles behind the model of teacher knowledge growth and development and incorporate nine keys to effective web facilitation. These keys were developed based upon the analysis of the developer's discourse evidenced in particular within the minor categories. Taken together, the principles, statements and keys provide a forward-looking contribution to the praxis of web-supported teacher education and further evidence of the connections between the latest research in the fields of knowledge, teacher education and web learning.

So, the chapter has remained true to the common trajectory of conceptualisation expressed in the literature review in Chapter 2 whilst articulating how the principles, the statements of advice and the keys to effective web development have moved our procedural knowledge forward, attempting thereby to further inform our understanding of epistemological knowledge.

PRINCIPLES	STATEMENTS	KEYS
1. Knowledge-Seeker: Teachers actively seek knowledge to confirm, support and extend the work they do in the classroom.	1 - Build, develop and extend the site based upon input from the users of the website.	**Key 8 (solicit comments and opinions)** Key 2 (show interest) Key 3 (maintain mood) Key 5 (empathise) Key 6 (ask questions) Key 9 (express support).
	2 – Ensure the website asks questions, sets tasks to be completed and challenges the users of the site.	**Key 6 (ask questions)** **Key 7 (encourage** participation) Key 4 (respond in detail) Key 8(solicit comments).
2. Knowledge-Discusser: Teachers question, share and discuss the change process and their reforming knowledge structure in order to adapt their existing knowledge structures and cement their beliefs.	3 - Give the users of the website as many avenues as possible to collaborate and interact with the site, the developer and other users.	**Key 7 (encourage participation)** Key 1 (respond rapidly) Key 4 (respond in detail) Key 3 (maintain mood) Key 9 (express support).
3. Knowledge-User: Teachers actively research, test and examine their reformed knowledge structure in different situations both individually and in collaboration with others.	4 - Build links into the website which give users access to forums where they can put their newly acquired knowledge into practice.	**Key 7 (encourage contributions)** **Key 8(solicit comments)** Key 2 (show interest) Key 4 (respond in detail) Key 5 (empathise) Key 6 (ask questions) Key 9 (express support).
4. Knowledge-Provider: As teachers become more confident in their beliefs and realise they have something original to offer, they look for ways in which to share their knowledge with others thereby becoming initiators and knowledge-providers in their own right.	5 - Encourage users of the website to contribute their research, papers and potential publications.	**Key 7 (encourage contributions)** Key 2 (show interest) Key 3 (maintain mood) Key 5 (empathise) Key 8 (solicit opinions) Key 9 (express support).
5. The Knowledge Cycle: As knowledge develops, teachers become more aware of other gaps in their knowledge and begin the cycle again. This knowledge cycle is driven by the theorizing of practical knowledge and practicalising of theoretical knowledge.	6 - Maintain the cycle of knowledge development by keeping in close and frequent contact with the users of the website.	**All 9 Keys**

Figure 6-4: Relationship between principles, statements and keys

Chapter 7 – The Evaluation: Validating the Research

In this chapter, I now support the claims made in Chapter 6 by demonstrating the validity and reliability of the research conducted. Whilst I see this chapter as formally required by the hypothesis-test-evaluation structure of this thesis and research, and as essential to the transparency of my qualitative approach and beliefs, readers already convinced of the validity of the research may wish to proceed directly to Chapter 8 since this review will involve a purposeful reformulation of the information presented and claims made in previous chapters.

In Chapter 1, I stated that the hypothesis being tested was that the successful development of the website would enable the emergence of a dual contribution to the field of teacher education. In Chapter 6, I claimed that I had succeeded in providing this dual contribution. First, a statement of emergent pedagogic theory expressed in an expanded model of teacher knowledge development based upon five principles was presented. Secondly, the research provided a practical contribution in the form of advice for other developers of teacher support sites through a series of six statements which incorporated nine keys to effective web facilitation.

Chapter 2, the literature review, laid the theoretical foundation behind these claims, and the next four chapters detailed this research and the analysis and interpretation of the data that evolved.

This chapter is an evaluation of the validity of the claims made in this research, and a justification of the value of this research, primarily to the field of TESOL. I am answering the questions posed by Edge & Richards (1998):

"So what?"

"What can I learn from this?" and

"Why should we believe you?"

In order to do this, I wanted to use a variety of methods to ensure the evaluation was fully comprehensive. I drew upon the naturalistic inquiry terms developed by Guba & Lincoln (1982) & and the comparative tabulation of these terms by Edge & Richards (1998) from Lincoln & Guba (1985). In this table, the naturalistic criteria of Lincoln & Guba (confirmability, dependability, transferability and credibility) are aligned to the more commonly used rationalist criteria of objectivity, reliability and validity as well as the Edge & Richards questions I am answering in this chapter.

Underlying Concept	Rationalist Criteria	Naturalistic Criteria
Neutrality	Objectivity	Confirmability
Consistency	Reliability Different researchers would generate the same claims and match data in the same way	Dependability So what?
Applicability	External validity Representations can be compared between groups	Transferability What can I learn from this?
Truth – value	Internal validity Observations are authentic representations of reality	Credibility Why should we believe you?

Figure 7-1: Alignment of rationalist and naturalistic criteria

This tabulation is a simplistic division which does not truly reflect the liquidity of the boundaries between the criteria. However, the table is a useful reference point to ensure the comprehensiveness of the evaluation in this chapter. The chapter is divided into four sections covering each of the naturalistic criteria. Each section begins with a description of the criterion demonstrating how I will be evaluating the research against it.

7.1 Confirmability

Confirmability is equivalent to the rationalistic concept of objectivity, but the focus for the naturalist inquirer is on the objectivity of the data (Guba & Lincoln 1982:247). The evaluation against this criterion should ensure that the study has provided evidence which confirms the data according to the researcher and demonstrates the involvement of others in the text which corroborates the claims. Guba & Lincoln (1982:248) suggest three procedures to evaluate the confirmability of qualitative research: triangulation, reflexive practice and a confirmability audit.

This section first uses Silverman's refutability principle method as a confirmability audit, and I then analyse a random sample of the data from Group Three worldwide users as a triangulation method. Chapter 3 included my research journal as a data type, and the references to that journal throughout the thesis cover the reflexive practice requirement of this evaluation.

Silverman's 'refutability principle' states that researchers should "seek to refute their initial assumptions about their data in order to achieve objectivity" (2000:178). This

reference to objectivity aligns Silverman's method with the confirmability criterion against which we are evaluating the study in this section.

In this research, I worked for 18 months on the analysis using theory memos and coding questions adapted from Titscher et al (2000:79-80), based on the work of Strauss (1987) and Strauss & Corbin (1990). For the last six months of 2003, I analysed the data from 2002, and then spent 2004 analysing the data from 2003 based on the earlier analysis. At every stage, as I have detailed in the theory memos, I used the memos themselves to record my doubts and how I worked on the data to ensure I was not settling for a "jump to easy conclusions" (Silverman 2000:178).

As examples of this, I offer the following quotes from the theory memos:
Early in the analysis of User 1.04's 2002 data I wrote, "From this analysis it appears that these two questions under open coding are in the wrong order. It makes more natural sense to ask about the category first so that the email data can be segmented first. Then I can look at the speech act 'happenings' within the segments". This example deals with how I adapted the coding questions to suit the analysis I was undertaking, and I have discussed this in detail in Chapter 3, Section 2.5.

Shortly after the above entry I noted under the analysis of User 1.05's analysis, "Knowledge-provider (questionable? If the offer of providing information and knowledge for the site is taken as 'knowledge-provider' then is the request for input also under this category – in some ways makes a lot of sense)". Here, we get a sense of the struggle I

went through to decide the sub-categories. In Chapter 5, I have left some of the initial sub-categories in the right-hand column of the data in an attempt to transparently demonstrate this struggle with the early analysed data. For example, Section 5.1 shows the move from very narrow sub-categories in the 'social' data such as 'work' to more accurate sub-categories such as 'local reference', and Section 1 where an example of data is left in the analysis under 'knowledge-seeker' although it was re-categorised as 'site feedback' later on.

I have thus demonstrated that the analysis presented in Chapter 5 meets the refutability principle by transparently detailing through the theory memos that I built the emergent categories on an ever-changing model, as data which did not fit the analysis was not discarded but used to rework, expand and strengthen the existing categories.

In order to see whether or not the categories remain as robust as claimed up to this point, I took a random selection from the 207 pages of raw email data from the Group 3 worldwide users who were not studying for the Aston MSc in TESOL / TESP. The data were saved in two files, one for 2002 and one for 2003. I analysed each first page, segmenting and categorizing the data as detailed in Chapter 3. I continued analysing the exchanges started on that page with a particular user for as long as they continued. I then went to each fifth page and started analysing again from the next new user. The examples below are drawn from the pages and exchanges analysed.

7.1.1 Knowledge-seeker

In Chapter 4 I wrote that 'this growth initially indicated that the knowledge sought by a small group of Aston MSc participants appeared to match that sought by a far wider TESOL community. This comparison of knowledge sought is further investigated in Chapter 7'.

The truth of that statement was borne out by the randomly selected review of the worldwide users' email data. There were numerous knowledge-seeker segments in the worldwide user data, and I include two email exchanges from May 2003 as examples here.

> As part of a research course, I am going to look at former ESL students in our district three and four years out of the ESL program, to see how they compare academically with their grade level peers. Right now I'm trying to collect literature to support factors which promote or inhibit achievement in a second language. **Would you know of anyone** who has done similar research? **Query**
>
> User 3.72 25th May, 2003

The five-day time gap needed to respond to this query was fairly typical for those responses to worldwide users that required a lot of detail.

> From your brief paragraph, I would say the best avenue of research is looking at the last decade of studies in Second Language Acquisition. Whilst I don't know any that address your specific area of interest [meaning lots of possibilities for future publication etc :):)], I would suggest starting with Rod Ellis' excellent book on SLA Research and Language Teaching (1997 OUP) especially for the bibliographical leads it gives.
> You could also try: The journal "Studies in SLA" at:
> http://journals.cup.cam.ac.uk/bin/bladerunner?30REQEVENT=&REQAUTH=0&116000REQSUB==&REQSTR1=SLA
> or
> http://www.indiana.edu/~ssla/
> and
> Vivianne Cook's amazing bibliography on SLA at:
> http://privatewww.essex.ac.uk/~vcook/slabib.html
> **Hope these two help.**
> If you are looking for something very different, let me know and I'll get back to you again. **Response**
>
> Developer to User 3.72 30th May, 2003

The use of 'hope these two help' to mark the response was remarkable in its similarity to the way three of the responses in the example exchanges in Chapter 5 were marked and indicates a standard linguistic phrase for these knowledge-seeker responses.

The next example is included as an indication of the detail I went into when replying to all users, not just those in the focus Group One, and remained consistent to the third effective web facilitation key. It is also another example of the 'hope this helps' linguistic marker for knowledge-seeker responses.

> Thanks for your interest in philseflsupport.com and your query. I think **the most powerful answer** is to give you a strategy to find articles and materials used in methods of teaching grammar. If you go to my article on The History of EFL available at:
> http://www.philseflsupport.com/efl_history.htm
> you will find numerous references to past methodologies used. You can then copy and paste them into Google Search and get countless links and articles that will help you.
> For example, I highlighted the first words I came across that matched your query "Grammar Translation" and copied them into Google - added ELT to narrow the search and on the first page picked out these three articles:
> http://www.cels.bham.ac.uk/resources/essays/Moritoshi2.PDF
> http://www.britishcouncilpt.org/journal/j0922rt.htm
> http://www.blesok.com.mk/lyriklife/biz/article01.html
> I **hope this helps** and provides you with endless resources :):) My next searches would be on: Marcel, Prendergast, Gouin, Sweet, Grammar Rules elt, Grammar terminology ELT,
> Latin style grammar in English.... and so on through the History of ELT article
> All the best and **hope this helps**
> Phil :):) **Response**
>
> Developer to User 3.73 23rd June, 2003
>
> **Thank you** for your help. I'm very grateful:) **Thanks**
>
> User 3.73 23rd June, 2003

The growth in the number of registered Group 3 worldwide users to 100 by December, 2003 and the fact that a quarter of those have contacted the developer on multiple occasions is an indication of the success of the site. It is a further demonstration that the site met a wider and more diverse need than that of the 36 registered users in focus Group One around whom the site had been developed.

7.1.2 Knowledge-discusser

My original impression was that there would be no examples of the knowledge-discusser category with users not in focus Group One, as I directed most other users to the discussion boards and tried to concentrate on the group the site was aimed at.

However, the selective review of the worldwide user data revealed two exchanges that met the definition of knowledge-discusser. One exchange involved a group of colleagues who were working with me on a journal writing page, as initially requested by a user from Group One, and this discussion was shifted onto the discussion board as the first major themed discussion. It is still the most viewed section of the discussion board. The other exchange was with User 3.26, and a full analysis of the knowledge discussions with him would be a complete article in itself. However, the main points noted in this investigation were briefly:

30 emails were exchanged

9 different topics were covered according to the subject titles of the emails

Much of the discussion was generated by two professionals discussing their websites and approaches to uploading data and designing the pages. User 3.26 was using his site as a repository for all his writings but was struggling with many of the same technical and design problems as I was. This particular discussion covered as many as 19 of the 30 messages, and although many of the segments would be classed as site feedback for

philseflsupport.com there were elements of each email that clearly continued an ongoing professional discussion.

A mutual interest in conditional structures also saw this topic discussed in segments of emails 2, 4, 5, 6, 16 and 29, even though the discussion topic was never an email subject title. It was interesting to see that the topic was returned to after substantial gaps in time.

Another interesting feature of the discussions in the worldwide group was that while clearly meeting the definition from the analysis in Chapter 5 -

Exchanges focusing on a specific professional subject with over four turns leading to an improved professional understanding for either of the discussers

- the category was not distinguished by the length of turns. The number of turns was definitely a feature, but the length was not. This may be due to the developer shifting the interest points that triggered these discussions onto the discussion board (web site designer issues) or onto web pages (conditionals), but I would need to do a much deeper analysis of several worldwide users before being able to state this clearly. Another possible reason for this could be the lack of developer focus on this group of users, but this has not been necessarily supported by the evidence in other categories. For example, the detail in the developer responses seen in the knowledge-seeker category responses above indicated an effort to treat all the users equally.

For the purposes of this evaluation, I have demonstrated that one worldwide user's exchanges met the definition of knowledge-discusser. I would leave it to further research

to determine whether the length of knowledge-discusser turns is a required element of the definition or whether it was a specific feature of this developer's exchanges with the users in the focus Group One.

7.1.3 Knowledge-user

As discussed in the analysis discussion in Chapter 5, there was not an abundance of knowledge-user segments within the email data and, since I had not done any questionnaire follow-up with users in other groups – seeing that as outside the remit of this research – I did not expect to be able to note many examples below.

Nevertheless, the selective analysis performed on the data from the worldwide users group did produce the following segments that were clearly within the knowledge-user category defined in Chapter 5 as '*The user demonstrates they (plan to) use the knowledge available from the site*'.

> Is it OK if I quote from you in my research?
>
> User 3.38 2nd September, 2002

This first example is similar to the segment from User 1.10 in Chapter 5. Despite it being a request, as opposed to a statement that the content site would be quoted, it is a clear demonstration that the user planned to use the knowledge available.

> For now, I work especially with the Stef Slembrouck's pages and it helps me a lot for both having an overview (as does your own classification *schema*) as well as providing me with sufficient details to go on.
>
> User 3.60 9th December, 2002

I found this response particularly interesting as it seemed that he had used the categorisation of material within the site as the knowledge framework for his own work and research. I sent a follow-up email asking for the user to explain this but, unfortunately, received no reply.

> Some time ago you helped me with my research into effective online professional development for EFL teachers. You can find a link to the completed dissertation on this subject at
>
> User 3.36 30th December, 2002

This example clearly indicated how the user had taken advantage of the knowledge available for his dissertation. The next example below showed how another user planned to use the site in three different ways.

> Phil's EFL Self Support web site ..... will be a good resource for me as I pursue my further studies. I think it will help with a summer institute project I'm working on - also a teacher resources site for H's ESL teachers
>
> User 3.05 5th January, 2003

The penultimate example used a request to demonstrate how the user planned to involve his DELTA students with the site content. This second example of a request indicating future planned use was interesting, and one I have flagged for further investigation.

> I run a DELTA course in Athens Greece. Would it be all right to give your link to my students?
>
> User 3.66 27th March, 2003

> I'm not an English Language teacher but I am an IT trainer studying her C&G 7407 and this site is great for reference material for my assignments and I'm going to recommend it to the rest of my class next week. I'm just putting the finishing touches to my teaching methods assignment and the 14 common teaching methods have been a great source to tap
>
> User 3.69 9th May, 2003

This final example fascinated me since it was not from an English Language teacher and demonstrated how the site was being used in the most unexpected ways. It would be a truly interesting area of further exploration to find out more about the unknown users of the site, especially now that the latest technologies provide us with the potential of discovering much more about the lurkers to any specific site.

7.1.4 Knowledge-provider

Much of the knowledge provision in the early stages of the site saw contributions from the worldwide user group as I drew on their specific expertise in response to the requests from focus Group One users. I include below one example of the standard three-part exchange in this category from the worldwide data analysed.

> I have your name from the latest IATEFL Teacher Development SIG Newsletter. ..... I have set up a web site as the vehicle for this research and am in the process of linking in your SIG's home page to the site. If you go to: ... you will find the link. Please let me know if this is OK with the SIG group. **Developer request**
>
> Developer to User 3.27 16th March, 2002

> The link is fine - I'll have a look at your page and put a reciprocal link on ours **User provision**
>
> User 3.27 16th March, 2002

> Thanks a million for the reciprocal link.... All the best and thanks for the quick response **Developer thanks**
>
> Developer to User 3.27 16th March, 2002

One of the biggest additions to the site in terms of knowledge provision was from the journal writing group I drew on increasingly after a Group One user asked for articles and contacts via a discussion board on this area. The first segment below was sent to all my journal writing contacts after the request had been received from the user.

> I am having another major upload in September and would hope to have a writing journals article from us on the writing skills pages. If you could each tell me how you plan to be working with journals over the coming academic year, then I will try and thread it together into a webpage with a link at the end to the bulletin board. **Developer request**
>
> Developer to Journal Writing Users 26th June, 2002

Having uploaded the page and started the discussion board, I received several responses from the group and the three below are examples of these.

> You can keep my paragraph just as it is and list my e-mail address. I have also registered on the discussion board and look forward to receiving my password. As I read through everyone's comments in the article **User provision with attachment**
> User 3.46 24th January, 2003

> You might want to change my reference at the beginning to a 'paragraph' **User provision**
> User 3.39 3rd February, 2003

> I finally have something new, pls delete old paragraph... **User provision with attachment**
> User 3.46 27th February, 2003

These emails, with their attached documents and paragraphs, were part of a full series of exchanges that formed the basis of a multi-author article that was a frequently visited page on the site (http://www.philseflsupport.com/journalwriting.htm). The discussion board and other email exchanges with the group also provided the basis for another page on the site: (http://www.philseflsupport/journalling2004tesol.htm).

The final exchange from the data analysed which I include as an example in this category was an example of how I was able to incorporate unsolicited provisions from worldwide users when they matched earlier requests from Group One users. In this case, the provision met the continued demand for more content on the vocabulary pages.

> Just a quick note to let you know about a website that is devoted to vocabulary learning strategies. I hope it will be of interest to you. http://www.wordsurfing.co.uk - a vocabulary learning strategy which encourages students to develop good language habits by keeping well-organized and personal notebooks. **User provision**
> User 3.77 2nd August, 2003

> Thanks again for the link. I've just spent a couple of hours browsing --- very impressive and I will add it to the language pages on my site under vocabulary. **Developer thanks**
> Developer to User 3.77 18th August, 2003

The range of segments categorised as knowledge-provider in the worldwide user data analysed is an indication of the value of this group to the site as subject experts, and it was particularly interesting to see how unsolicited provisions consistently matched previous Group One user requests.

7.1.5 Social exchanges

The four sub-categories of opening, local reference, study and closing will be dealt with in turn by taking the first examples from the 2002 data in chronological order. The first email in those filed under 2002 worldwide users (Group Three) saw the three possible social sub-categories covered, namely the opening, local reference and closing with the linguistic indicators bolded:

> Hi Phil, **Opening**
> I've also sent the URL to a teacher I met yesterday in a workshop I gave about using IT in the traditional classroom. **Local reference**
> Thanks for keeping me on your list. It's a great reminder to check back into your site. I need to get busy and do the same around here. Regards, **Closing**
>
> User 3.05 10th January, 2002

The other category, study, has a definition that refers directly to the Aston study that singled out the focus group. This I will leave in place for the purposes of this research, but further studies may want to redefine this category. Under this definition, any study reference other than Aston would be categorised as local reference.

The first email in those filed under the following year's 2003 worldwide users (Group Three) saw the same three social sub-categories covered, and it is interesting to see that the first email of the year was from the same user.

Hi Phil. Opening
My news is that I'm applying to the University of Washington to do an Ed D in Curriculum and Instruction, with a focus on educational technology. Local reference
Regards from me and I. Closing
J

User 3.05 5th January, 2003

The number of segments categorised as social in this selective analysis of worldwide users indicated, interestingly, that I continued to follow the same discourse strategy as with the Group One users, and this was supported by the evidence that I used the keys to effective web facilitation.

7.1.6 Site feedback

This category was divided into the three main turns of request, feedback and response. The first couple of emails from the worldwide group gave examples of feedback with the first example taken from the email that was used as the first example in the social category above, and the second example showing a promise for feedback as covered in the definition.

I can't believe how much you've built this site, that is. It is wonderful. I have bookmarked it and will add it to my links pages. Feedback

User 3.05 10th January, 2002

I've had a quick look at the site and will try and give you some feedback later. Feedback

User 3.27 16th March, 2002

And I will give just one example of my developer response.

Thanks a million S. Response

Developer response to User 3.27 16th March, 2002

Although feedback was sought primarily from the focus Group One of those studying for the Aston MSc, there were still a couple of examples of requests for feedback. I wonder

now if this was a 'keep the potential users interested' tactic since the development of the site was only based on input from the Group One users.

If you have any feedback on the site I would be more than grateful. Request
Developer response to User 3.27 16th March, 2002

7.1.7 Site registration

As the registration feature of the site was not operational until later in 2002 (see Chapter 4), I have taken the first two examples from the data analysed in this category from 2003.

I'd be interested in being on your database. Registration
User 3.16 12th January, 2003

welcome to the philseflsupport.com family :)
I've added your details to the database. Confirmation
Developer to User 3.16 13th January, 2003

I would deeply appreciate it if you'd let me be part of your team. Registration
User 3.64 5th January, 2003

As the registration page is not yet fully functional I have entered you manually on the data base. Welcome to the world of PHILSEFLSUPPORT.COM Great to have you on board. Confirmation
Developer to User 3.64 13th January, 2003

I should note that the delay in the response time here was due to me being away for two weeks at the beginning of January and that this was explained elsewhere in the email. Most noteworthy is how similar the pattern and language were to the user registration exchanges with the Group One users.

7.1.8 User introduction

Since the focus in this category was on building contacts for the Group One Aston MSc users there were few examples of this category in the worldwide emails, but I include the

three that were in the pages analysed during this selective approach to the worldwide data.

The first offer was a response to a user request to provide a worksheet in English and Arabic and linked the user to colleagues in Abu Dhabi.

> Happy to do so but would not trust myself with the Arabic, so I have forwarded it to the ELT team who have Arabic as L1 and will see **if any of them respond. Offer**
>
> Developer to User 3.67 21st April, 2003

The second offer was more general and appeared to be another example of the developer discourse strategy to maintain contact with all the registered users on the website.

> Let me know whenever you would like to see something added to the site or are trying to **contact** someone. **Offer**
>
> Developer to User 3.53 6th October, 2002

The final example was a straight-forward two-part exchange with the user requesting contact to an old colleague who had provided pages for the website, and the developer providing that contact having checked with the colleague verbally that I could pass on those details.

> The most interesting and surprising part was finding pages written by RH who was our colleague, tutor for the CEELT II and friend here in L.B. Do you **see her??** Request
>
> User 3.61 10th December, 2002
>
> Her **email** at work is: rh@h.ac.ae Sling her an email - I'm sure she's love to hear from you **Introduction**
>
> Developer to User 3.61 11th December, 2002

This brief analysis of the Group Three worldwide users' data and the resultant evidence of segments matching the four major and four minor categories is a strong indication that these categories are as robust as I have claimed.

7.1.9 Nine keys to effective web facilitation

Rather than mirror exactly the same analysis and interpretation as I have done in Chapter 6, I will simply give an example that demonstrates I applied each of the keys in my exchanges with the worldwide users as part of my overall developer email discourse strategy. I particularly liked the comment under point 4 which suggests that I maintained that friendly mood through the language of the site and not just in my email communication.

1. **Respond rapidly.** Thanks very much for the quick response. (User 3.86. 15th October, 2003)
2. **Show interest.** Many thanks again for your time and interest. (User 3.77. 29th November, 2003)
3. **Respond in detail.** In response to a query on distance masters programmes, I replied: *Interestingly when I was setting up the page I was asked if I could build a similar page (or links) of available Masters courses worldwide and I ran into a similar problem as you. I have knowledge or URLs of maybe 50 in the UK, US and Australia but these have been gathered through personal contacts and individual searches. The most successful searches I did were a series of three in Google and Northern Lights on: Masters in ELT, Masters ESOL, Masters TEFL TESL. I don't have a ranked comprehensive list although I could give you my personal top ten if you wanted me to. My own experience has shown that the majority of Masters candidates take between a year and two years from deciding to do a Masters to actually registering and starting a course. 90% of them rely on word of mouth and recommendations from colleagues and the cost factor plays a large element in the final decision as well. That is why the Australian Universities have done so well in attracting candidates over the last year.* (Developer to User 3.38. 26th August, 2002)
4. **Maintain a friendly mood.** What a friendly welcoming site! (User 3.43.16th September, 2002)
5. **Empathise.** Nice to get a blast from the past. I did love C. (Developer to User 3.27. 16th March, 2002)
6. **Ask frequent questions.** Any ideas from your end? (Developer to User 3.70. 12th May, 2003)
7. **Encourage contribution / participation.** Do you fancy doing summat on conditionals I can put under my grammar page??? Or giving me something you've already written that can go there? (Developer to User 3.26. 5th March, 2002)
8. **Solicit comments and opinions.** Let me know what you think. (Developer to User 3.36. 22nd June, 2002)
9. **Express support.** Please let me know ..... how I can help and support you. (Developer to User 3.62. 20th December, 2002)

These examples and those in the analysis of the worldwide user data above indicate that the developer used the proposed keys to effective web facilitation in the email exchanges with all users and not just those within the focus Group One

7.2 Dependability

Dependability refers to the consistency, reliability and stability of the research. Guba & Lincoln (1982) suggest that one way in which the dependability of a study can be confirmed is through the use of a dependability audit. This audit should ensure there is transparency in the recording of data through proper documentation, which openly describes any changes to the situation, participants and emergent design. The audit should ensure that the data is transformed into evidence for the argument so that the decisions made and conclusions reached are justifiable in context. This audit will, therefore, evaluate the justification for the claims made in Chapter 6 and allow the "so what" question to be addressed with confidence. Silverman (2000:12) proposes five inter-related methods for the evaluation of the validity and reliability of qualitative research studies, and this section uses four of his methods to perform the dependability audit.

For the purposes of this dependability audit, I will address four of Silverman's methods as they relate to the research behind this thesis. The four methods I will be using are the constant comparative method, comprehensive data treatment, the use of appropriate tabulations and deviant-case analysis. Thereby, I attempt to ensure the reliability of the study, consolidate the validation of the research and argue that this provides the warrant required for my claims at the end of Chapter 6.

The first of the four methods is the 'constant comparative method' which means that the researcher "should always attempt to find another case through which to test out a provisional hypothesis" (Silverman 2000:179). He goes on to state that even though this is not always feasible, the constant comparative model can still be followed by simply inspecting and comparing all the data fragments. He then says that many researchers with an overwhelming volume of data may not be able to do even this, but can still follow the method by beginning their analysis on a relatively small part of the data and then steadily expanding the corpus once the initial categories have been determined.

In this research, I used the theory memos to reflect on each data set in turn (see Chapter 3) and how it met the emerging categories at that time. A data set was considered to be all the email exchanges from a single user over a year. I began with the data from 2002 and moved from User 1.01 onwards. At key points – after 10 users, after a year – I then went back through the data comparing the original analysis to the latest emergent category model. This resulted in many of the changes noted in the discussion on the refutability principle, changes which I have left in the data records exemplified throughout the thesis. This demonstrates how I moved from a small data set to eventually include all the data collected. All segments were inspected and analysed, finishing with the discussion board exchanges. Ultimately, 219 pages of email data alone (see Appendix 4) were analysed resulting in 65 pages of theory memos which were then merged into one document deleting all overlaps to give a final 10-page theory memo of conclusive data, which demonstrated that all the data over the two years matched the categories finally settled upon.

In addition to fulfilling Silverman's requirements for the constant comparative method, I also tested the claims made in Chapter 6 against another case by randomly analysing a selection of data from the worldwide group of users whose data were not part of the focus Group One analysis (see Section 1 above).

Silverman's next method is 'comprehensive data treatment', and is fully covered in Section 3 below dealing with the depth and substantiality of the research. As Silverman (2000:180) notes, "such comprehensiveness goes beyond what is normally demanded in many quantitative methods".

The penultimate method I will use here is 'deviant-case analysis' which, as Silverman (2000:181) himself states, should not be required if all the data has been analysed and has fully covered the constant comparative method. If that is done, there should be no deviant cases outstanding, as the final categories settled upon incorporate all the data available. In effect, what happens is that the researcher must detail the deviant cases against the categories during the analysis. This was done through the use of the theory memos and the transparent presentation of data in the thesis. However, let me draw attention to one 'deviant-case' as we discuss this method.

I quote from Chapter 5, Section 5.4 – User Introduction:

"This category was originally called User Interaction but was changed after analysing the above examples, settling on the definitions and reviewing the roles taken on in the exchanges. The theory memos consistently viewed the relationship in this category as

'contact catalyst', 'net-worker connecting users' and 'contact provider' with the result of new professional networks being set up. The roles are all consistent with an introduction rather than all interaction. The redefining of the category as User Introduction also succeeded in responding to the argument that all the interaction on the bulletin board fell under a user-interaction category".

As the description shows, I had already analysed two years' worth of email data before moving to the discussion board data. Finding myself categorizing all the exchanges as User Interaction, I was forced to re-examine the name and definition of this category. Once I settled on User Introduction and found the discussion board data fitted well into this category, I had to return to all the email data and ensure that the previously categorised 'User interaction' turns still fitted the new category. I then had to look at all the definitions from the other main categories since they described the user and the developer in contrasting roles whereas the discussion board data clearly showed users taking on developer roles. I therefore redefined the categories placing the user as the subject of each definition, and then returned once again to the 219 pages of data and re-checked that these definitions still worked.

Peräkylä (1997:210-211) outlines three different ways in which deviant cases can be dealt with. First, they can demonstrate "the interactants' orientation to the same considerations and normative orientations that produce the 'regular' cases" and provide additional support for the analyst's claims. Second, an explanation can be sought for the "individual contingencies of the single case". Finally, the analyst can change his construction to

incorporate the deviant case into a revised model. The example above clearly shows that this final approach is how I dealt with any deviant cases in this research. In effect, my overall analysis methodology ensured that deviant cases were dealt with, as I believe strongly that deviant cases should result in a complete overhaul of the data analysis if new categories or sub-categories emerge, or if a segment does not fit with the existing categories.

The final method of Silverman I use here is 'using appropriate tabulations' (2000:184-185). He argues that "there is no reason why qualitative researchers should not, where appropriate, use quantitative methods" (2000:185). In this thesis, quantitative tables have been used in Chapter 4 to show the growth of users, the number of monthly responses, the number of hits on the site and the number of hits per page and from country. The quantitative data demonstrated the success of the site and that the knowledge sought by the 31 Group One users via email appears therefore to mirror that sought by many more teachers worldwide, which, in turn, would indicate that there is further opportunity to test the model, principles, keys and statements of advice posited here. Without the quantitative data, it would be impossible to show that others had used the site beyond the registered users.

This section has demonstrated how the research meets the dependability criterion by using Silverman's methods for validating the reliability of qualitative research.

7.3 Transferability

Transferability addresses the question: "What can I learn from this"? It is the extent to which readers can draw parallels to their situation and context. This can be facilitated, according to Guba & Lincoln (1982:248), by employing thick description, which is the provision of detailed contextual information about the study. Holliday, in his 2002 publication on "doing and writing qualitative research", listed eighteen key points (2002:8) and questions (2002:115) that should be addressed if qualitative research is to be considered rigorous enough to substantiate its claims. Holliday does not differentiate between internal and external validity and uses his thick description criteria to address both, using the terms 'depth' and 'substantiality' to demonstrate the validity of qualitative research. There is certainly an argument that the thick description evaluation I use below meets the criteria for credibility as well as transferability, with the richness of description leading to context-specific understanding that should resonate with the experience of readers.

In this section, I will deal with each of Holliday's key points and questions briefly, cross-referencing to the relevant parts of the thesis in order to substantiate that the research has been conducted in sufficient depth to warrant the claims that have been made in Chapter 6. The eighteen points (2002:8) and questions (2002:115) cover the setting of the research, the research activities, the themes and foci of the research, and the data and their connection to theory.

7.3.1 The setting

The first four points deal with the setting of the research; the choice of social setting, how the setting represents the research topic, how feasible it is and how substantial the setting is in terms of length, breadth and depth.

Chapter 4 introduces the setting that is the website, http://www.philseflsupport.com. The website as the chosen setting is appropriate to the research topic in how it acts as the vehicle for the research. It is the meeting point and the springboard for the users who are looking for support. To approach the appropriateness of the setting, we could look at it from a different perspective. If no user had visited the site, I could have either concluded that teachers studying at a distance could not be supported via a web-medium or realised that I had chosen an incorrect setting. The initial and continued response of the users clearly demonstrates the appropriateness of the website as the setting with over 13,000 hits per month (see Chapter 4).

The case study has demonstrated that the website as the setting is feasible. At the start of the research, I was concerned that such a resource could not be maintained by one person, an isolated researcher, to the satisfaction of the users. I half expected the initial interest in the site to drop as the halo effect dissipated and I failed to respond to all the user requirements. However, as detailed in Chapter 4, the site grew in line with user requests and I was able to respond rapidly and in depth to all users, as detailed in Chapter 6, Section 2. The user feedback to questionnaires and comments in their emails (Chapters 5 and 6) demonstrated that the site has also met with user satisfaction. Access to the site

has been 24 hours a day, seven days a week and 365 days a year, so the usual questions about setting access do not truly apply here. We could investigate the fact that the site only serves those self-selecting teachers and question what could be done to offer further support to others who do not self-select but , I would argue, this lies outside the remit of this research while potentially offering avenues for further investigation.

The setting meets the duration, depth and breadth conditions of substantiality laid out by Holliday (2002:8) against his criteria for research settings (2002:38). It was the shift to the focus group of teachers studying for the Aston University MSc in TESOL-TESP which allowed the setting to meet these criteria as it was only then that the "sense of boundedness" could be achieved. Holliday suggests that this sense of boundedness should relate to time, place and culture. The boundedness of time was set by the conditions of this research with data for analysis collection from emails, discussion boards and questionnaires halted in January, 2004. The boundedness of place was set by the website itself. So, although the users came from all over the world, they were bounded in their use of the site. Finally, the boundedness of culture needs some investigation. I would tie Holliday's sense of culture to the discussion in Chapter 6, Section 1.2 on discourse communities, and would suggest that the tentative conclusion reached there and the narrowing of the relevant data to be analysed to the specific Group One users studying for the Aston Masters has fulfilled the requirement against Holliday's boundedness criteria for a small enough culture to provide relevant and interconnected data.

Chapters 4 - 6 demonstrate that this setting has accomplished the provision of relevant and interconnected data with the setting of the website allowing data to be gathered from statistics of user hits and location, email exchanges, discussion board postings and finally individual questionnaire completion. When the developer's research journal and theory memos are added to this selection (see Chapter 3), the variety, relevance and interconnectivity of the data fully meet the criterion of richness (Holliday 2002:38) that is the final point to be evaluated in the section covering the substantiality of the setting. I have aimed to write the setting descriptions throughout this thesis in a rich vein that attempts to capture the depth and substantiality of the research context so that it may echo with readers' experiences and trigger their interest to explore further.

7.3.2 The research activities

Leading on from the last section, the next four points to be addressed all deal with research activities; the choice of research activities, how they suit the setting above, how appropriate they are to the researcher and how these research activities form a coherent strategy.

The previous section demonstrated the depth and substantiality of the setting and how the setting generated a rich variety of data from a small interconnected culture. The data and their connectivity to theory are evaluated in Section 3.4 below. This section deals with the research activities as outlined in Chapter 3 and referred to continually throughout the thesis.

Since I am drawing upon Holliday, I base this section upon his three research activity statements (2002:6), namely that research activities will look deep into the quality of social life, will locate the study within a setting which provides opportunities for exploring all the variables within manageable boundaries, and will lead to more informed exploration as themes emerge. The second of these three statements has already been covered in my evaluation in the previous section on the website setting, and the third statement will be covered in the following section.

That the research activities have looked deeply into the quality of social life is evidenced in the choice and variety of the activities. Chapter 3 outlines in detail the choice of research activities and the reasons behind them. Moving from a predominantly qualitative position, which uses quantitative data to support its argument, this research used a case study approach around one focus group of website users as its primary activity. From the outset a research journal was maintained to ensure that my perspective as researcher and my decisions were recorded as they happened. This journal has been referenced throughout the thesis. Chapter 4 details how I arrived at the process of collecting the email data received and putting it into the Word format suitable for analysis as evidenced in the extracts used throughout Chapters 5 and 6, and in Appendix 4. The questionnaires used at the end of the research and at the one meeting with a user were developed based on queries raised by the users in their email exchanges and by the developer in his journal. The questions were piloted during the one user meeting and adjusted based on his feedback. Chapter 3, Section 2 detailed how I arrived at the use of theory memos (see

Appendix 1) as the main recording device to detail my thoughts during the data analysis process. These have been quoted from throughout the thesis.

The choice of these varied research activities suits the website setting of this research in that they could produce the multiple perspective in-depth data required without the face-to-face interviews that were impractical given the international spread of the core users. The research activities also suit the setting in that the whole research is based upon supporting teachers studying at a distance, so it was important to base the research within a distance format to fully understand user feelings of isolation, loneliness (Wilson 2001:12) and need.

By setting myself within a distance forum as a researcher I allowed myself some empathy with the teachers I was attempting to support. The research activities were arrived at within the setting detailed in the previous section. Taken together these research activities form a coherent strategy which is compatible with my overriding methodological philosophy detailed at the beginning of Chapter 3. I was able to draw a clear line from my belief in qualitative research being the most effective and appropriate line of enquiry for the investigation into teacher work to the use of a web-based case study. This case study generated a variety of data for the emerging analysis, which allowed the reformulation of sound pedagogical principles behind the creation of teacher support sites.

7.3.3 Themes and foci

Leading on from the above, the reformulation of the principles was arrived at through the analysis of emerging themes and foci as detailed in Chapter 5. The third set of Holliday's four points deals with the themes and foci of the research; the choice of themes and foci, how these themes and foci emerged, why they are significant and how representative they are of the social setting in Section 3.1 above.

Chapters 5 and 6 have demonstrated the emergent themes and foci, drawing upon the theory memos to describe the way in which they emerged and my thought processes during data analysis. To summarise briefly, Chapter 5 outlined the four main categories of knowledge-seeker, knowledge-user, knowledge-discusser and knowledge-provider which emerged during the analysis, and demonstrated how the knowledge-user category emerged from the different perspective of the website users. Chapter 6 described how the four categories mapped onto the cycle of teacher knowledge development and informed the five principles behind the model. The lack of revision to the wording of the knowledge-user principle at the end of Chapter 6 is a reflection of the strength of that category. Chapter 5 also detailed the minor categories which were not directly related to the theme of teacher knowledge development, but which proved significant in the interpretation, as they related to the statements of advice and the development of the keys to effective web facilitation. The emergent themes and foci were therefore all significant in the final claims made.

The extent to which the themes and foci are representative of the social setting under study has been demonstrated in that they have been drawn from the analysis and interpretation of the varied data that were generated from the setting itself. This direct tie from the setting to the themes and foci has been detailed throughout Chapters 4, 5 and 6.

7.3.4 The data

The final points and questions from Holliday's 'thick description' (2002:113) cover the data and their connection to theory. The questions that will be addressed in this section are: which data; from which sources; how the data interconnect; what the data mean; how the data mean what they mean; and the data's relationship to theory (Holliday 2002:115).

The data selected, as detailed in Chapter 3, included the email and discussion board exchanges as the primary sources, as well as the research journal, the theory memos, the user questionnaire responses and my emails to the tutor. Quantitative data was also selected showing the user groupings and growth in each group, the number of responses per user and per month, site reviews with the number of pages and links, statistics on the number of hits per page and per country and photo-shots of the web pages at different stages of site development.

As can be seen from the above, the data were drawn from multiple sources including the website, myself as both developer and researcher and, most importantly, the different users from around the world. The data interconnected in numerous ways, but most

importantly in how they linked to the principles of teacher knowledge development allowing an extension of the model and the revision of the principles and statements of advice initially drawn from the literature in Chapter 2. The categories that emerged were robust in that they matched the data from 36 users consistently over two years, and it was this interconnectivity and robustness that provided the confidence behind the claims made in Chapter 6.

The email and discussion board data were the voices of the users and meant that the resulting categories were based upon their input. The questionnaires confirmed the categories and allowed further categories to be explored. The research journal and theory memos acted as my continuous conscience ensuring that the data analysis and interpretation remained consistent with the goals and beliefs upon which the research is based. The quantitative data was the key to demonstrating that the case study was not an isolated instance of one or two users driving a small-scale project, but a larger vehicle which added weight to the claims made.

Finally, the revision of the model and principles of teacher knowledge development, the reworking of the statements of advice for web developers of teacher support sites and the construction of the keys for effective web facilitation (see Chapter 6) are a clear indication of how the data has influenced the theory and created the claims of this research.

By employing Holliday's thick description criteria, I have demonstrated how the research has met the transferability criteria through the presentation of richly contextualized reports that allow specific understanding which can be transferred. This transferability leads to the significant contribution of this research, namely the revised model of teacher knowledge development in Chapter 6, the five principles upon which the model is based and the statements of practical advice for web developers incorporating the nine keys of effective web facilitation.

7.4 Credibility

The clearest description of this criterion is best rephrased as the question: Why should we believe you? According to Guba & Lincoln (1982:247, Lincoln & Guba 1985:289-331) naturalist inquirers can go a long way towards ensuring the credibility of their research by following six procedures: prolonged engagement, persistent observation, peer debriefing, member checks, triangulation, and referential adequacy materials. In this section, I will indicate how each of these procedures has been covered in the thesis, detailing the relevant content in each chapter.

The five and a half years of this research would meet most interpretations of prolonged engagement and persistent observation, but it is clearly the quality of work and observation within that time that requires authentication. Guba & Lincoln (1982) refer to the 'inquirer's presence', 'the context' and 'the problem', and I draw parallels to other qualitative research authors (Silverman 1997, Silverman 2000, Hollway & Jefferson 2000, Holliday 2002) who recommend validating research by explicitly declaring the

value system of the researcher along with the position, purpose and expectation of the study. I use the same authors to confirm that the persistent observation procedures established in the study were clear and credible versions of what happened in terms of the description and interpretation of the situation, data collection and methodology.

This research described my qualitative research beliefs at the beginning of Chapter 3, detailing my overall philosophy and examining my approach against Holliday's (2002) criteria for qualitative research. Throughout the thesis I have kept my 'inquirer's presence' at the forefront of my writing especially by drawing on the theory memos and my research journal. In Chapter 1, the purpose and expectation of the study were explicitly declared as I stated that the hypothesis being tested was that the successful development of this website would enable the emergence of a dual contribution to the field of teacher education, and the emerging position of the study was described through Chapters 4 to 6.

The situation was described in Chapter 3 with the case study being set within the boundaries of Group One users of the website. Chapter 4, then, illustrated the growth of the website with quantitative data supporting the key features behind the emerging data. The data collection methods and methodology were clearly outlined in Chapter 3, which took the reader from the selection of the focus group and segmentation through the choice of method to the model of language analysis and types of data.

"Peer debriefing" and "member checks" refer to the involvement of uninvolved and involved colleagues. This has been demonstrated through the development of the website based upon user input and the use of their feedback through the questionnaires as detailed in Chapters 3 and 6. The input to the site from specific experts as knowledge-providers can be understood as using uninvolved colleagues. For example, the input on management topics referred to in Chapter 6.2 under key 4 saw me draw upon the expertise of my business faculty peers.

"Triangulation" refers to the use of multiple data sources and different perspectives to cross check the research, and "referential adequacy materials" are the raw data collected during the study and archived without analysis (Guba & Lincoln 1982). Chapter 3.2.8 detailed the seven qualitative and eight quantitative sources of data that were used in this research to provide a variety of perspectives. Chapter 5.3 provided the best example of how the users' perspective informed the analysis through the emergence of the knowledge-user category. Section 1 above drew upon the data collected from worldwide users, Group Three, which was archived along with all the data from the other non-focus groups as Guba & Lincoln advised.

By giving the examples above and cross referencing to the appropriate parts of the thesis, I have demonstrated how the research has met the credibility criterion through the honest presentation of data, an appropriate selection of records and the careful documentation of procedure.

7.5 Summary

In this chapter I have evaluated the objectivity, reliability and validity of this research against the naturalistic criteria of Guba & Lincoln (1982, 1985, 1989). I have used the qualitative research criteria of Silverman (2000) as the method to evaluate the objectivity and reliability, and the depth and substantiality criteria of Holliday's thick description (2002) as the method to investigate the validity. I have argued that this research has fully met all of these criteria.

The growth of the number of site users and their spread worldwide also indicates that the needs and knowledge sought by a small group of Aston MSc participants appears to match that sought by a far wider TESOL community especially when we consider the *current* – at the time of writing June 2005 – numbers are:

Focus group 1 was made up of 35 users from: Japan (9), UAE (6), Greece, Oman, Spain, Switzerland, Taiwan, Turkey (2) and China, Croatia, Ireland, Korea, Malaysia, Mexico, Poland and Saudi Arabia (1). This figure does not include those registered on the discussion board whose location is unknown.

Other groups: 197 users from 39 countries on all continents including the largest numbers from UAE (79), UK (23), US (17), Japan (7), Australia (6), Brazil (6), Spain (4), China (3) and Cyprus (3).

Hits from all users and lurkers based on the latest Matrixstats report in February 2005: 15,927 hits from 91 countries including top ten country users that include Philippines (3.3%), Poland (2.3%), Canada (2.1%) and Uruguay (1.6%) who are not named in the two groups above.

Even allowing for multiple hits by single users and the probability that some pages could produce multiple hit records, the numbers above and those given in Chapter 4 indicate several thousand users, registered and lurking, every month. This widespread usage of the site is further validation of the need that is being fulfilled by the site and a reflection of the site's construction around the knowledge sought by a specific set of users meeting a need in the wider TESOL professional field.

A final evaluative method that I have used is in the final reading of the full first draft of the thesis. I offered all 31 users from Group One who contributed data to the research via email the opportunity to read the thesis. Five of the users did so and provided positive feedback with no suggestions for any major corrections.

In summary, I would like to return to the questions posed by Edge and Richards (1998):

"So what?" – The next chapter will deal with this question in more detail but, apart from providing web developers with a sound theoretical model, a set of principles, a series of advice statements and the keys to effective web facilitation, I would suggest the model itself has sound practical applications for the development of teacher education courses

that match what we have learnt in the last few years about how we acquire knowledge as humans and develop as teachers.

"What can you learn from this?" – I would hope that there are least two areas of learning covered in this thesis, namely, a well founded and researched model of teacher knowledge development supported by sound principles, and a set of practical statements for web designers which, when used in conjunction with the keys to effective web facilitation, will result in teacher support sites that truly meet the needs of their end users.

"Why should you believe me?" – I suggest that this chapter has demonstrated the detail and depth of the research. The analysis remained transparent, showing how categories were arrived at and how the definitions and segmentation changed as data contradictions arose. Chapter 3 described in detail the methodology and this chapter has evaluated the consistency with which I followed the principles and procedures outlined there, demonstrating the validity of the research undertaken. The final chapter will now review the claims made, look at the limitations of the study and explore the avenues of future research that have arisen from this research.

Chapter 8 – The Conclusion:

Claims, Limitations and Future Research

This chapter sees five years of my life come to a close. They have been five years that have seen the inkling of an idea bloom into this full blown thesis. They have been five years of ups and downs, which I imagine all researchers go through, and it has been an incredible journey both professionally and personally. I could never have imagined at the outset that I would be writing this conclusion with a functioning web site that is receiving around 15,000 hits a month, a model of teacher knowledge development, a clearly articulated set of principles to describe the model and a set of statements of practical advice to future developers of teacher support sites that are easily applicable, eminently functional and manage to incorporate the nine keys to effective web facilitation that emerged unexpectedly from the data.

This opening paragraph is a brief summary of the claims made in the thesis which will be reiterated in detail in the first section below. The second section then looks at the various limitations of the study which need to be considered when drawing upon this research. Section 3 explores avenues for further research that have arisen from this study, some of which I have already begun working on and others which I believe will further inform the model, principles, statements of advice and keys detailed in Section 1 below. Finally, the conclusion attempts to draw the previous seventy thousand words into a brief coherent statement of all that has gone before.

8.1 Claims

In Chapter 2, I claimed that the main aim of the research was to drive forward ways of understanding the development of teacher knowledge and how this could be practically applied, thereby enhancing procedural knowledge in its own right.

The model of teacher knowledge development presented at the end of Chapter 6 with its accompanying principles does, I would claim, take our understanding forward by giving a visual representation that is not just intuitively accurate but tried and tested through this research. To some extent, this research has shown that the model is practically applicable but Section 3 below suggests ways in which the model can be further evaluated. These include the development of an online diploma of English Language Teaching which uses the model as its philosophical foundation. The outcomes of this diploma will in themselves provide years of future study into the effectiveness, accuracy and practicality of the model.

The major claims of this research detailed at the end of Chapter 6 are briefly reiterated here. In Chapter 6, I proposed a model of teacher knowledge development that can be visually represented by the figure below, and which attempts to capture the cyclical nature of that development. I noted that the model is not as static as the diagram may appear since we use the various stages at every phase of our development, often simultaneously. The model, and our knowledge development, continually shifts as we collaborate, research and work towards extending and deepening our understanding of the profession and the subject we teach.

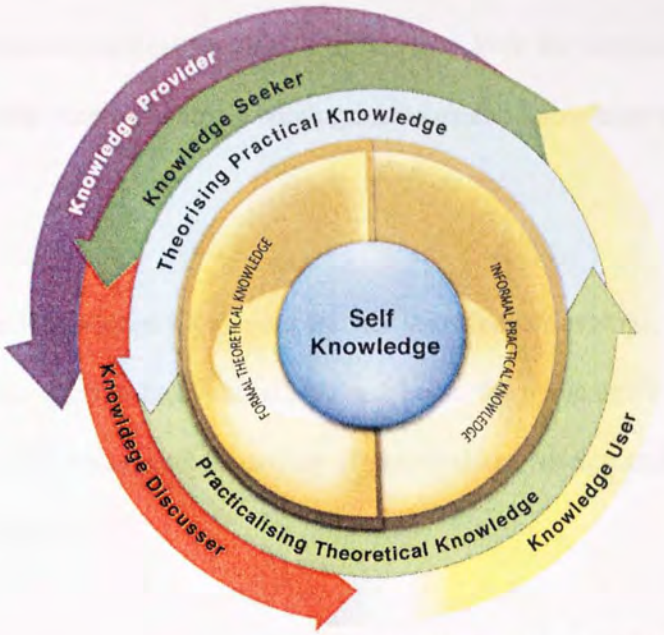


Figure 8-1: Model of teacher knowledge development - final

This visual representation is supported by five principles which, I have claimed, underpin teacher knowledge development. These principles are, briefly:

Principle 1 – Knowledge-Seeker: Teachers actively seek knowledge to confirm, support and extend the work they do in the classroom.

Principle 2 – Knowledge-Discusser: Teachers question, share and discuss the change process and their reforming knowledge structure with a 'knower' and / or others in order to adapt their existing knowledge structures and cement their beliefs.

Principle 3 – Knowledge-User: Teachers actively research, test and examine their reformed knowledge structure in different situations both individually and in collaboration with others.

Principle 4 – Knowledge-Provider: As teachers become more confident in their beliefs and realise they have something original to offer, they look for ways in which to share their knowledge with others thereby becoming initiators and knowledge-providers in their own right.

Principle 5 - The Knowledge Cycle: As teacher knowledge develops, teachers become more aware of other gaps in their knowledge and begin the cycle again. This knowledge cycle is driven by the continuous theorising of practical knowledge and practicalising of theoretical knowledge.

I then drew upon these principles to re-examine the statements of practical advice for the developers of teacher support sites that had been tentatively proposed in Chapter 2 following the literature review. These were re-worked to more closely reflect the principles and model above incorporating the keys to effective web facilitation to provide a blueprint for the successful development of teacher support sites. The six statements of practical advice are briefly:

Statement 1:

Build, develop and extend the site based upon input from the users of the website.

Statement 2:

Ensure the website asks questions, sets tasks to be completed and challenges the users of the site.

Statement 3:

Give the users of the website as many avenues as possible to collaborate and interact with the site, the developer and other users.

Statement 4:

Build links into the website which give users access to forums where they can put their newly acquired knowledge into practice.

Statement 5:

Encourage users of the website to contribute their research, papers and potential publications.

Statement 6:

Maintain the cycle of knowledge development by keeping in close and frequent contact with the users of the website.

Chapter 6 also detailed nine keys to effective web facilitation which were drawn primarily from the analysis of the minor categories and examined the developer's discourse strategy. It was claimed that the constant application of these nine keys to effective web facilitation, when incorporated within the above statements of advice, aided the building of trust essential to the effective support of the website users. The nine keys to effective facilitation are briefly:

Key 1: Respond rapidly

Key 2: Show interest

Key 3: Maintain a 'friendly' mood

Key 4: Respond in detail

Key 5: Empathise

Key 6: Ask frequent questions

Key 7: Encourage contributions and participation

Key 8: Solicit comments and opinions

Key 9: Express support

As detailed in Chapter 2, Section 4, I have not discovered a web site that has been developed based upon the input of its end-users who are EFL / ESL teachers studying for further degrees, and which aims to provide support for those teachers as they take their research beyond the realms of their degree course. In this way, I would claim that this is one contribution to the field of TESOL teacher education that I am primarily aiming this study at. The next step would be to see others develop support sites based on this model and its principles and then revise, adapt and extend them accordingly.

Further, I would claim that the model and principles above contribute to our field in that they bring together the three literatures discussed in Chapter 2 in a way which highlights the similarities in their development. The outcome is therefore a model which has a sound theoretical basis across three distinct fields and is particularly relevant as we approach a new technological era that will allow the model to be explored in ways we

cannot yet envisage. The future of teacher education in TESOL is an exciting one as long as we continue to develop new models that incorporate the technology that is increasingly evident in classrooms worldwide and do not ignore the opportunities that this technology can provide.

8.2 Limitations

The nature of any research this length will, by definition, include countless limitations. I have attempted throughout this thesis write-up to be transparent and open about the limitations of the study being undertaken and have mentioned examples throughout. For the purposes of this concluding chapter I would like to take those three limitations that have bothered me the most as researcher. No doubt, every reader would come up with a different selection, but I would hope that whatever limitation they see has been, at least, minimally addressed elsewhere in the thesis.

The greatest limitation in the literature review was the scope of reading that was taken on. As I was attempting to draw upon the similarities in the literature of three fields, I clearly ran the immediate risk of covering all three in insufficient depth. I was necessarily required to paint a very broad picture of the development of knowledge and learning, and Chapter 2 is, therefore, a study in brevity. There are numerous criticisms that could be levied from the lack of detail in a specific area, for example distance learning, to an incorrect focus, for example on teacher knowledge in general to the detriment of teacher knowledge in ELT in particular. I can only admit that I was aware of these limitations and attempted to address them through as wide a sampling of all the areas in as much

depth as feasible given the length of this work. In the end I decided that I wanted to bring fresh literature into the ELT field from, perhaps, unexpected perspectives. The outcome, I would suggest, warrants the choice made, but only further reading and research against the model can ultimately confirm the robustness of the theoretical foundation behind the final model and principles.

The limitation that most weighed on my mind from the methodological chapter was the late choice of the focus group. If I could start all over again, I would narrow the research to a homogenous group from the very outset before I had even got the web space booked with a provider. I am not sure how different the site would have looked had I started in this way, since I believe the major overhaul in 2002 to Version 2 created the site that met the needs of the specific focus group settled upon. Nevertheless, the early choice of a focus group would have allowed me to use the very first responses as data and the whole case study would have possibly been more powerful as a result. The other area this impinges on is the discussion referred to throughout the thesis about discourse community. By settling upon a homogenous group from the outset, I could have immediately worked at creating a more distinct discourse community with, I imagine, the resultant more active involvement in the discussion boards at the knowledge-discusser stage. I have, therefore, decided to flag this limitation here for other researchers although the volume of responses to the website and the detail of the data do indicate that this late choice of focus group was perhaps less of a problem than I initially feared for this study.

Finally, the greatest limitation detailed in the case study was, for me as researcher, the technology factors involved. I am not necessarily referring here to simply not having the right hardware, but more to the limitations of any research that has a footing in technology fields. Technology is changing today at such a rapid pace that the technology you write about is out of date before the paragraph is finished let alone the research. For example, Stevens (2005:8) has listed the "latest free communications technologies that work over the Internet for language learning and teacher training. These technologies include asynchronous tools such as blogging, and synchronous ones such as text, voice, and webcam-enabled chat services". None of these were available at cost, let alone free, when this research began, and even today current research is just beginning to explore their use. Future research will have the potential to avoid some of the difficulties I was faced with, for example, online registration, the choice of discussion boards and the inclusion of live chat and webcam facilities. I suggest that in the case of this research, this was after all, perhaps, not such a problem since the aim of the technical side of the research was to support the investigation into teacher knowledge development. The statements of advice for web developers are, I would claim, not technologically dependent but founded on a sound pedagogical theory, namely the principles of teacher knowledge development, and how these can be met by web developers at a distance. I have, therefore, attempted to phrase the statements of advice in such a way that they can be adapted to new technologies as they arise.

8.3 Areas of further research

As with limitations, a study of this length and depth will generate too many avenues of further research to mention in one concluding section. However, for the purposes of this section, I will detail the avenues that I know I already want to work on as well as others generated by the analysis and interpretation.

The first avenues of research to be discussed must be those that follow up on the proposed model of teacher knowledge development. I have already indicated earlier in the chapter how I will be building upon the research here by developing a new diploma for English language teachers based upon the model. This diploma and its success will provide further validity claims, or not, for the model's robustness. During the diploma's first year, I will focus my attention on the role of reflection and knowledge processing discussed below and how they can be represented more clearly within the model. I envisage that this diploma could potentially demonstrate that the model has sound practical applications for the development of teacher education courses that match what we have learnt in the last few years about how we acquire knowledge.

In several places throughout the thesis I have noted that reflection and knowledge processing are core characteristics of the development of teacher knowledge. The study has indicated that these are essentially private, individual activities which can only be researched once they have been vocalized through knowledge discussion or the knowledge provision of personal narratives and case studies. I have therefore suggested that reflection and knowledge processing lie at the heart of the teacher development

model, permeating it throughout. Nevertheless, future research may be able to better highlight the role of reflection within the model.

During this research, I posited at one stage that there could be evidence of a knowledge-processor category focused upon teacher reflection and how new knowledge is adapted to existing knowledge structures or how existing knowledge structures are adapted in light of this newly received knowledge. A search on key terms such as 'challenging', 'reflect' and 'think' appeared initially to support this addition to the model, but deeper analysis of the segments saw them fall into the knowledge-user category as noted in the theory memos. I feel it is important to recognise the potential of including reflection explicitly within the model as a separate category and it will, undoubtedly, be one of my main focal points as I develop the new teacher development diploma around the model. For example, I would attempt to devise different tasks which could provide more focused data for the vocalization of teacher's thinking or processing of new knowledge. Whether or not this would see the emergence of a new category and further principles can only be determined by further research.

The next avenue of future research I foresee is the development of teacher support sites that are developed using the statements of practical advice suggested by this research. If these sites were developed around a specific focus group of users from the very outset – for example, a group of distance masters students on the same programme – the accompanying research and outcome of that site would greatly support the claims made here.

Such sites could also provide the potential for further study around some of the issues raised in this thesis. For example, determining how crucial the website developer role is, investigating the petering out of CMC discussions, evaluating the importance of the length of turns in the knowledge-discusser category and exploring the human element in web based communication. This exploration could include further research on the keys to effective web facilitation. I have to some extent already begun this with my online journal work substantiating six of the nine keys in a forth-coming chapter on reflective writing practices (Quirke & Zagallo, unpublished). There is much work that can be done with these keys, and their applicability across a range of potential studies from journaling to online course delivery would, I expect, see them validated in a number of fields.

The third avenue I would like to see followed is the technology path. Stevens (2005) has already listed a number of technology tools which could greatly enhance any site's ability to meet the knowledge-discusser category. Further research would no doubt develop different methodological approaches that would more effectively substantiate the inclusion of this category within the model.

This advancing technology will also allow new sites and further research to explore areas that I could only touch on in this thesis. The examples which will most likely benefit from recent tools are the exploration into the reasons why teachers do not self-select onto potentially valuable resources and why lurkers do not get involved in but continually return to sites. Another issue which we are likely to understand far better as technology advances is that of identity online and how our web-based communication develops as

our online identity matures. This, in turn, may inform our understanding of how online discourse communities are created and the role they play in successful professional discussions.

The limitation of the literature review discussed above suggests that further in-depth reading around specific fields such as distance education and online learning could test the model out in ways I have not foreseen and which would, I hope, see the model adapted, extended and strengthened.

There are numerous other potential avenues, but this selection demonstrates the potential of this research, the claims made and how philseflsupport.com can contribute further to the profession.

8.4 Conclusion

Five years ago I set out to explore the development of a website to support English language teachers doing further degrees at a distance. I wanted to determine if the successful development of this website enabled the emergence of a dual contribution to the field of teacher education. First, I wanted to articulate a statement of emergent pedagogic theory on teacher knowledge in a series of six principles developed from the cross-disciplinary literature and then evaluated for its practical applicability. Second, I wanted to be able to construct statements of practical advice for the development of other such web sites which could be further evaluated as they would be in this research.

Reading through the aims from the introduction that were formalized so long ago, I would claim that the research has accomplished all three. The website has been developed. A well-defined pedagogic theory of teacher knowledge development has been fully articulated. And, the statements of practical advice have been tied closely to the theory's principles and supported by the keys to effective web facilitation.

Therefore, I would suggest, the research makes a significant dual contribution to the field of English language teacher education.

The success of the website and its future potential are a significant added bonus both professionally and personally. I would like to conclude with the words of the users who contributed so much to this research and to whom a simple 'thanks' will never be enough.

> "The information was like a compact book, which gave me an overall picture of what is involved in reading" - User 1.01.

> "The reason I accessed it was to find support and shed some light on some of the things I was doing.... I was quite disorientated and I appreciated Phil's approach, which had less of an academic and more of a personal, friendly presentation"
>
> - User 1.28.

> "I think there are a lot of other teachers like me who are seeking to improve their credentials with a master's degree and are in need of guidance and support. You've found a need and are in the privileged position of filling it. That's great"
>
> - User 1.29.

Long may I be able to fill that need. There is nothing more professionally fulfilling.

REFERENCES

Allwright, D. & Bailey, K. (1991). *Focus on the Language Classroom.* Cambridge: Cambridge University Press.

Altrichter, H. & Posch, P. (1989). Does the grounded theory approach offer a guiding paradigm for teacher research? *Cambridge Journal of Education.* Vol. 19, No. 1.

Altrichter, H., Posch, P. & Somekh, B. (1993). *Teachers investigate their work: An introduction to the methods of action research.* London: Routledge.

Anning, A. (1988). Teachers' theories about children's learning. In Calderhead, J. (Ed.). *Teachers' professional learning.* London: Falmer. 128-145.

Atkin, J. M. (1968). Research styles in science education. *Journal of Research in Science Teaching* 5, 338-45.

Atkinson, J. M. & Heritage, J. (Eds.). (1984). *Structures of social action: Studies in conversation analysis.* Cambridge: CUP.

Atkinson, P. (1992). *Understanding ethnographic texts.* Newbury Park, CA: Sage.

Atkinson, R. C. & Shiffrin, R. M. (1968) Human memory: A proposed system and its control processes. In Spence, W. K. & Spence, J. T. (Eds.). *The psychology of learning and motivation: Advances in research and theory.* New York: Academic Press.

Austin, J. L. (1962). *How to do things with words.* Oxford: Clarendon Press.

Bailey, K. M. (1990) The use of diary studies in teacher education programs. In Richards, J. C. & Nunan, D. (Eds.). *Second Language Teacher Education.* Cambridge: CUP.

Bailey, K. (1997). Reflective teaching: Situating our stories. *Asian Journal of English Language Teaching*. Vol. 7. 1-19.

Bailey, K., Curtis, A. & Nunan, D. (2001). *Pursuing professional development: The self as source.* Boston: Heinle & Heinle.

Ball, D. L. (1991). Research on teaching mathematics: Making subject-matter knowledge part of the equation. In Brophy, J. (Ed.). *Advances in research on teaching.* London: JAI Press. 1-48.

Ball, D. L. & McDiarmid, G. W. (1990). The subject matter preparation of teachers. In Houston, W. R. (Ed.). *Handbook of research in education.* New York: MacMillan. 437-449.

Barnes, D. & Shemilt, D. (1974) Transmission & interpretation. *Educational Review 26:213-228*

Bartlett, D. & Payne, S. (1997). Grounded theory – its basis, rationale and procedures. In: McKenzie, G., Powell, J. & Usher, R. (Eds.). *Understanding social research: Perspectives on methodology and practice.* London: Falmer. 173-196.

Bartlett, L. (1990). Teacher development through reflective teaching. In Richards, J. C. & Nunan, D. (Eds.) *Second language teacher education.* Cambridge: CUP, 202-214.

Bartley, D. E. (1969). Microteaching: rationale, procedures and application to foreign language. *Audio-Visual Language Journal, 7, 3.* 139-44.

Bates, A. (1994). Distance education, educational technology. In: Husen, T. & Postlethwaite, T. (Eds.). *The international encyclopedia of education.* Oxford: Elsevier Science. 1573-1580.

Baym, N. K. (1998). The emergence of on-line community. In Jones, S. G. (Ed.). *Cybersociety 2.0 – Revisiting computer-mediated communication and community.* Thousand Oaks, CA: Sage. 35-68.

Beattie, M. (1997). Fostering reflective practice in teacher education: inquiry as a framework for the construction of professional knowledge in teaching. *Asia-Pacific Journal of Teacher Education, 25*(2), 111-128.

Beer, V. (2000). *The web learning fieldbook: Using the world wide web to build workplace learning environments.* San Francisco, CA: Jossey-Bass Pfeiffer.

Belkin, G. S. & Gray, J. L. (1977). *Educational Psychology: An Introduction.* Dubuque, IA: Wm. C. Brown.

Benner, P., Tanner, C. A. & Chesla, C. A. (1996). *Expertise in nursing practice: Caring, clinical judgment and ethics.* New York: Springer.

Bennett, N. (1993). Knowledge bases for learning to teach. In Bennett, N. & Carre, C. (Eds.). *Learning to teach.* London: Routledge. 1-17.

Bennett, S., Priest, A-M. & Macpherson, C. (1999). Learning about online learning: An approach to staff development for university teachers. *Australian Journal of Educational Technology,* 15 (3), 207-221.

Bereiter, C. & Scardamalia, D. (1993). *Surpassing ourselves: An inquiry into the nature and implications of expertise.* Illinois: Open Court.

Berliner, D. C. & Carter, K. (1989). Differences in processing classroom information by expert and novice teachers. In Lowyck, J. & Clark, C. (Eds.). *Teacher thinking and professional action.* Louvain: Louvain University Press. 55-74.

Bernhardt, E. B. & Hammadou, J. (1987). A decade of research in foreign language teacher education. *Modern Language Journal 71: 289-99.*

Best, J. B. (1986). *Cognitive Psychology.* St. Paul, MN: West.

Biggs, J., & Watkins, D. (1993). The nature of student learning: A conceptual framework. In Biggs, J. & Moore, P. J. (Eds.), *The Process of learning.* New York: Prentice Hall.

Bloom, B. S. (1956). *Taxonomy of educational objectives: The classification of educational goals. Handbook 1: Cognitive domain.* New York: McKay.

Borg, W. R., Kelly, M. L., Langer, P. & Gall, M. (1970). *The minicourse: A microteaching approach to teacher education.* London: Collier-MacMillan.

Borg, S. (1998). Teachers' pedagogical systems and grammar teaching: A qualitative study. *TESOL Quarterly,* 32 (1), 9-38.

Bork, A. (1996). Advantages of computer based learning. *Journal of Structured Learning, 9,* 63–76.

Boshier, R. (1990). Socio-psychological factors in electronic networking. *International Journal of Lifelong Education.* Vol. 9, No. 1, 49-64.

Brewer, W. F. (1974). There is no convincing evidence for operant or classical conditioning in adult humans. In Weiner, W. & Palermo, D. (Eds.). *Cognition and symbolic processes.* Hillsdale, N.J. Erlbaum

Brock, M. N., Yu, B. & Wong, M. (1992) 'Journaling' together: collaborative diary-keeping and teacher development. In Flowerdew, J., Brock, M. & Hsia, S. (Eds.) *Perspectives on Second Language Teacher Education.* Hong Kong: City Polytechnic of Hong Kong.

Brown, G. & Yule, G. (1983). *Discourse Analysis.* Cambridge: CUP.

Brownlee, J., Purdie, N & Boulton-Lewis, G. (2003). An investigation of student teachers' knowledge about their own learning. *Higher Education,* 45: 109–125.

Bruner, J. (1990). *Acts of meaning.* Cambridge, MA: Harvard University Press.

Brűnner, G. & Becker-Mrotzek, M. (1992). Angewandte gesprachsforschung: Ziele-methoden-probleme. In Fiehler, R. & Sucharowski (Eds.). *Kommunikationsberatung und konnunikationstraining.* Opladen: Westdeutscher Verlag. 12-23.

Bunker, A. & Ellis, R. (2001). Using bulletin boards for learning: What do staff and students need to know in order to use boards effectively? In: Herrmann, A. & Kulski, M. (Eds.). *Expanding horizons in teaching and learning.* Proceedings of the 10th annual teaching learning forum, 7-9 February. Perth: Curtin University of Technology.

Burns, A. (1999). *Collaborative action research for English language teachers.* Cambridge: CUP.

Burton, D. (Ed.) (2000). *Research training for social scientists.* London: Sage.

Burton, D. (2000). Design issues in survey research. In Burton, D. (ed.). *Research training for social scientists.* London: Sage.

Burton, J. (1998). A cross-case analysis of teacher involvement in TESOL research. *TESOL Quarterly* Vol. 32, No. 3, 419-446.

Burton, J. & Carroll, M. (Eds.) (2001). *Journal Writing.* Alexandria, VA: TESOL.

Calderhead, J. (1988). The development of knowledge structures in learning to teach. In Calderhead, J. (Ed.). *Teachers' professional learning.* London: Falmer. 51-64.

Calderhead, J. & Miller, E. (1986). *The integration of subject matter knowledge in student teachers' classroom practice.* San Francisco, CA: Reeds Ltd.

Campbell, K. (1999). The Web: Design for active learning. *Academic Technologies for Learning.* http://www.atl.ualberta.ca/articles/idesign/activel.cfm

Carlgren, I. (1996). Professionalism and teachers as designers. In Kompf, M., Bond, W. R., Dworet, D. & Boak, R. T. (Eds.). *Changing research and practice: Teachers' professionalism, identities and knowledge.* London: Falmer. 20-32.

Carlsen, W. S. (1991). Subject matter knowledge and science teaching: A pragmatic perspective. In Brophy, J. (Ed.). *Advances in research on teaching, Vol. 2.* London: JAI Press. 115-143.

Carr, W. & Kemmis, S. (1986). *Becoming critical: Knowing through action research.* London: Falmer.

Carrier, M. (1997). ELT online: the rise of the Internet. *ELT Journal, 51, 3, 279-309.*

Castner, J. (2000). The asynchronous, online writing session: A two-way stab in the dark? In Inman, J. A. & Sewell, D. N. (Eds.). *Taking flight with OWLs: Examining electronic writing center work.* Mahwah, NJ: Erlbaum. 119-128.

Chaudron, C. (1988). *Second Language Classrooms.* Cambridge: CUP.

Chi, M. T. H., Glaser, R. & Farr, M. (Eds.). (1988). *The nature of experience.* Hillsdale, NJ: Erlbaum.

Chomsky, N. (1959). Review of 'Verbal Behavior' by B. F. Skinner. *Language 35: 26-58.*

Chomsky, N. (1968). *Language and mind.* New York: Harcourt Brace.

Clandinin, D. J. (1992). Narrative and story in teacher education. In Russell, T. & Munby, H. (Eds.). *Teachers and teaching: From classroom to reflection.* London: Falmer. 124-137.

Clandinin, J. & Connelly, M. (1986) What is 'personal' in studies of the personal? In Ben-Peretz, M., Bromme, R. & Halkas, R. (eds.) *Advances of Research on Teacher Thinking.* Lisse: Swets & Zeitlinger.

Clandinin, D. and Connelly, F. (1996). A storied landscape as a context for teacher knowledge. In Kompf, M., Bond, R., Dworet, D., and Boak, R. (Eds.), *Changing research and practice: teachers' professionalism, identities and knowledge.* London: Falmer Press.

Clark, R. (1994). Media will never influence learning. *Educational Technology Research and Development.* Vol. 42, No. 2, 21-29.

Clarke, M. A. (1983). The scope of approach, the importance of method, and the nature of technique. In Alatis, J. E., Stern, H. E. & Stevens, P. (Eds.) *Applied Linguistics and the Preparation of Second Language Teachers: Toward a Rationale.* (GURT 1983). Washington, D.C. Georgetown University Press.

Cochran-Smith, M. (1999). Learning to teach for social justice. In Griffin, G. (Ed.). *98th Yearbook of NSSE: Teacher education for a new century: Emerging perspectives, promising practices, and future possibilities.* Chicago, IL: University of Chicago Press. 114-144.

Cochran-Smith, M. and Lytle, S. (1993). *Inside/outside: teacher research and knowledge*. New York: Teachers' College Press.

Cole, M. (1996). *Cultural psychology: A once and future discipline*. Cambridge, MA: Harvard University Press.

Cole, M., & Engeström, Y. (1993). A cultural-historical approach to distributed cognition. In Salomon, G. (Ed.). *Distributed cognitions: Psychological and educational considerations.* Cambridge: CUP. 1–46.

Cruickshank, D. R. & Applegate, J. H. (1981). Reflective Teaching as a Strategy for Teacher Growth. *Educational Leadership 38,* 553-4.

Darling-Hammond, L. (1999). Educating teachers for the next century: Rethinking practice and policy. In: Griffin, G. (Ed.). *The education of teachers*. Chicago: University of Chicago Press. pp. 221-256.

Davis, K. A. (1995). Qualitative theory and methods in applied linguistics research. *TESOL Quarterly* Vol. 29, No. 3, 427-453.

Day, C. (1999). *Developing teachers: The challenges of lifelong learning*. London: Falmer Press.

Dewey, J. (1938). *Logic: The theory of inquiry.* New York: Henry Holt.

Denzin, N. & Lincoln, Y. (Eds.) (1994). *Handbook of qualitative research.* Thousand Oaks, CA: Sage.

Díaz-Rico, L. T. (2000). Intercultural communication in teacher education: The knowledge base for CLAD teacher credential programs. *The CATESOL Journal*, 72 (1), 145-161.

Dinham, S. and Scott, C. (1996). *The teacher 2000 project: a study of teacher satisfaction, motivation and health.* Sydney, NSW.

Doff, A. (1988). *Teach English: A training course for teachers. Trainer's Handbook.* Cambridge: CUP

Dori, Y. J., Barak, M., & Adir, N. (2003). A Web-based chemistry course as a means to foster freshmen learning. *Journal of Chemical Education*, 80(9), 1084–1092.

Driver, R., & Oldham, V. (1986). A constructionist approach to curriculum development in science. *Studies in Science Education, 5, 61-84.*

Draves, W. A. (2000). *Teaching online.* River Falls, Wisconsin: LERN Books.

Dreyfus, H. L. & Dreyfus, S. E. (1986). *Mind over machine.* New York: Free Press.

Dubin, F. & Wong, R. (1990). An ethnographic approach to inservice preparation: the Hungary file. In Richards, J. C. & Nunan, D. (Eds.) *Second language teacher education.* Cambridge: CUP, 282-292.

Dubrovsky, V. J., Kiesler, S. & Sethna, B. (1991). The equalization phenomenon: Status effects in computer-mediated and face-to-face decision-making groups. *Human-Computer Interaction, 6.* 119-146.

Duguid, P., & Brown, J. S. (2000). *The social life of information.* Cambridge, MA: Harvard University Press.

Dunkin, M. & Biddle, B. (1974). *The study of teaching.* New York: Holt, Rinehart & Winston.

Edge, J. (1992). *Cooperative development: Professional self-development through cooperation with colleagues.* Harlow: Longman.

Edge, J. (Ed.) (2001). *Action Research.* Alexandria, VA: TESOL.

Edge, J. & Richards, K. (1998). May I see your warrant, please? Justifying outcomes in qualitative research. *Applied Linguistics* 19/3, 334-356.

Efran, J. S. & Greene, M. A. (1996). Psychotherapeutic theory and practice: Contributions from Maturana's structure determinism. In Rosen, H. & Kuehlwein, K. T. (Eds.). *Constructing Realities: Meaning-making perspectives for psychotherapists.* San Francisco, CA: Jossey-Bass. 71-113.

Elbaz, F. (1983). *Teacher thinking: A study of practical knowledge.* London: Croom Helm.

Eldred, J. C. & Hawisher, G. E. (1995). Researching electronic networks. *Written Communication, Vol. 12, Issue 3.* 330-360.

Elliott, J. (1991). *Action research for educational change.* Milton Keynes: Open University Press.

Engeström, Y. (1999). Activity theory and individual and social transformation. In Engström, Y., Miettinen, R. & Punamaki, R. (Eds.). *Perspectives on activity theory.* Cambridge: CUP. 19-38.

Entwistle, N. J. (2000). Approaches to studying and levels of understanding: The influences of teaching and assessment. In Smart, J. C. (Ed.). *Higher education: Handbook of theory and research. Vol. 15.* New York: Agathon Press. 156-218.

Entwistle, N. J. & Marton, F. (1994). Knowledge objects: Understandings constituted through intensive academic study. *British Journal of Educational Psychology* 64, 161-178.

Eraut, M. (1994). *Developing professional knowledge and competence.* London: Falmer.

Farrell, T. (1998). Reflective teaching: The principles and practices. *Forum, Vol. 36, No.4. 10.*

Feiman-Nemser, S. & Floden, R. E. (1986). Cultures of teaching. In Wittrock, M. (Ed.). *Handbook of research on teaching.* (3rd Edn.). New York: MacMillan. 506-526.

Fenstermacher, G. D. (1994). The knower and the known: the nature of knowledge in the research on teaching. In Darling-Hammond, L. (Ed.). *Review of research in education.* Washington DC: AERA. 3-56.

Fielding, N. & Fielding, J. (1986). *Linking data.* London: Sage.

Flanders, N. A. (1960). *Interaction analysis in the classroom: A manual for observers.* Ann Arbor: University of Michigan Press.

Foley, G. & Schuck, S. (1998). Web-based conferencing: Pedagogical asset or constraint? *Australian Journal of Educational Technology,* 14 (2), 122-140.

Formica, P. (2004). *Strengthening the Knowledge Economy: Essays on Knowledge Policy and International Entrepreneurship*. Milan: EffeElle Editori, Cento-Ferrara.

Fraser, B.J., & Tobin, K. (1988). Investigations of exemplary practice in high school science and mathematics. *Australian Journal of Education, 32, 75-94.*

Freeman, D. (1991). *Language teacher education, emerging discourse and change in classroom practice.* Plenary address at first international conference on teacher education in second language teaching. City Polytechnic of Hong Kong. April.

Freeman, D. (1996). The "unstudied problem": Research on teacher learning. In Freeman, D. & Richards, J. C. (Eds.) (1996). *Teacher learning in language teaching.* Cambridge: CUP. 351-378.

Freeman, D. (1998). *Doing teacher research: From inquiry to understanding.* London: Heinle & Heinle.

Freeman, D. (2000). Imported theories, local understandings. *TESOL Matters.* Vol. 10, No. 4. 1 & 5.

Freeman, D. & Cornwell, S. (Eds.) (1993). *New ways in teacher education.* Alexandria, VA: TESOL.

Freeman, D. & Johnson, K. (1998). Reconceptualizing the knowledge-base of language teacher education. *TESOL Quarterly,* Vol. 32, No. 3, 397-417.

Freeman, D. & Richards, J. C. (1993). Conceptions of teaching and the education of second language teachers. *TESOL Quarterly* Vol. 27, No. 2, 193-215.

Freeman, D. & Richards, J. C. (Eds.) (1996). *Teacher learning in language teaching.* Cambridge: CUP.

Furlong, J. & Maynard, T. (1995). *Mentoring student teachers.* London: Routledge.

Gal-Ezer, J., & Lupo, D. (2002). Integrating Internet tools into traditional CS distance education: Students_ attitudes. *Computers & Education*, 38, 319–329.

Garmon, M. A. (2001). The Benefits of Dialogue Journals: What Prospective Teachers Say. *Teacher Education Quarterly,* 37-50

Gee, J. (1990). *Social linguistics and literacies: Ideology in discourses.* Philadelphia: Falmer Press.

Gergen, K. (1995). Social construction and the educational process. In Steffe, L. & Gale, J. (Eds.). *Constructivism in Education.* Hillsdale: NJ: Erlbaum. 17-39.

Glaser, B. & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research.* Chicago, IL: Aldine.

Glaser, R. (1990). Expertise. In Eysenk, M. W., Ellis, A. N., Hunt, E. & Johnson-Laird, P. (Eds.). *The Blackwell dictionary of cognitive psychology.* Oxford: Blackwell. 139-142.

Glaser, R. & Chi, M. T. H. (1988). Overview. In Chi, M. T. H., Glaser, R. & Farr, M. (Eds.). *The nature of expertise.* Hillsdale, NJ: Erlbaum. xv-xxxvi.

Golombek, P. R. (1998). A study of language teachers' personal practical knowledge. *TESOL Quarterly* Vol. 32, No. 3, 447-464.

Golombek, P. R. & Johnson, K. E. (2004). Narrative inquiry as a mediational space: Examining emotional and cognitive dissonance in second-language teachers' development. *Teachers and Teaching: theory and practice, 10.* 307-328.

Good, T. L. & Brophy, J. E. (1990). *Educational psychology: A realistic approach.* White plains, NY:Longman.

Goodson, I. F. (Ed.) (1992). *Studying Teachers' Lives.* London: Routledge.

Goodwin, C., Graham, M. & Scarborough, H. (2001). Developing an asynchronous learning network. *Educational Technology and Society Online*, 4 (4), http://ifets.ieee.org/periodical/vol_4_2001/scarborough.html

Gore, J. and Zeichner, K. (1995). Connecting action research to genuine teacher development. In Smyth, J. (Ed.). *Critical discourses in teacher education.* London: Cassell.

Gouin, F. (1892). *The art of teaching and studying languages.* London: George Philip.

Gray, T. (1998). ED's Oasis: Teacher support for internet use. *Technological Horizons in Education Journal,* Vol. 25, No. 8, 62 (3).

Greene, J. (1986). *Language Understanding: A cognitive approach.* Milton Keynes: Open University Press.

Greening, T. (1998). WWW support of student learning: A case study. *Australian Journal of Educational Technology*, 14 (1), 49-59.

Griffin, G. A. (Ed.) (1999). *The education of teachers: Ninety-eighth yearbook of the national society for the study of education.* Chicago, IL: NSSE.

Grossman, P. (1990). *The making of a teacher: teacher knowledge and teacher education.* New York: Teachers College Press.

Guba, E. & Lincoln, Y. (1982). Epistemological and methodological bases of naturalistic inquiry. *Educational Communication and Technology Journal* 30, 233-254.

Guba, E. & Lincoln, Y. (1989). *Fourth generation evaluation.* Newbury Park, CA: Sage.

Guidano, V. F. (1987). *Complexity of the self.* New York: Guilford Press

Guidano, V. F. (1991). *The self in process.* NewYork: Guilford Press.

Gunawardena, C., Lowe, C. & Anderson, T. (1997). Analysis of a global online debate and the development of an interaction analysis model for examining construction of knowledge in computer conferencing. *Educational Computing Research,* Vol. 17 (4), 397-431.

Guzdial, M., & Turns, J. (2000). Effective discussion through a computer-mediated anchored forum. *Journal of the Learning Sciences, 9, 437–469.*

Habermas, J. (1972). *Knowledge and human interests.* London: Heinemann.

Habermas, J. (1990) Reconstruction and interpretation in the social sciences. In Habermas, J. (Ed.). *Moral consciousness and communicative action.* Cambridge: Polity Press.

Halliday, M. A. K. (1973). *Explorations in the functions of language.* London: Edward Arnold.

Halliday, M. A. K. & Hasan, R. (1976). *Cohesion in English.* London: Longman.

Halpern, D. (1996). *Thought and knowledge: An introduction to critical thinking.* Mahwah, NJ: Lawrence Erlbaum Associates Inc.

Hammersley, M. (1992). *What's wrong with ethnography? Methodological explorations.* London: Routledge.

Hammersley, M. & Atkinson, P. (1995). *Ethnography: Principles in Practice.* London: Routledge.

Hammond, M. (2000). Communication within on-line forums: The opportunities, the constraints and the value of a communicative approach. *Computers & Education, 35.* 251-262.

Hara, N. & Kling, R. (2000). Students' frustrations with a web-based distance education course. *First Monday,* Issue 4, No. 12.

Harasim, L., Hiltz, S. R., Teles, L. & Turoff, M. (1993). *Learning networks: A field guide to teaching and learning online.* Cambridge: MA. MIT Press.

Hargreaves, D. (1997). Teaching as a research-based profession. *British Educational Research Journal, 23, 141-161.*

Harvard Business Review on Knowledge management. (1998). Cambridge, MA: Harvard Business School Press.

Head, K. & Taylor, P. (1997). *Readings in Teacher Development.* London: Heinemann.

Henning, E. & Van der Westhuizen, D. (2004). Crossing the digital divide safely and trustingly: How ecologies of learning scaffold the journey. *Computers & Education, 42.* 333–352

Hertel, G., Geister, S. & Konradt, U. (2005). Managing virtual teams: A review of current empirical research. *Human Resource Management Review 15.* 69-95.

Hillocks, G. J. (1999). *Ways of thinking, ways of teaching.* New York: Teachers College Press.

Hiltz, S. & Wellman, B. (1997). Asynchronous learning networks as a virtual classroom. *Communications of the ACM,* Vol. 40, No. 9.

Hmelo-Silver, E. (2003). Analyzing collaborative knowledge construction: multiple methods for integrated understanding. *Computers & Education, 41, 397–420.*

Hoey, M. P. (1983). *On the surface of discourse.* London: Allen & Unwin.

Holdaway, S. (2000). Theory and method in qualitative research. In: (Ed. Burton, D.). *Research training for social scientists.* London: Sage, 156-166.

Holliday, A. (2002). *Doing and writing qualitative research.* London: Sage.

Hollway, W. & Jefferson, T. (2000). *Doing qualitative research differently: Free association, narrative and the interview method.* London: Sage.

Holly, M. L. (1997). *Keeping a professional Journal.* Geelong: Deakin University Press.

Hong, K-S., Lai, K-W. & Holton, D. (2001). Web based learning environments: Observations from a web based course in a Malaysian context. *Australian Journal of Education Technology*, 17(3), 223-243.

Horton, W. (2000). *Designing web-based training: How to teach anyone anything anywhere anytime.* New York: John Wiley & Sons.

Hübscher-Younger, T. & Narayanan, N. H. (2003). Authority and convergence in collaborative learning. *Computers & Education, 41.* 313–334

Hyde, P. (2000). Towards a virtual learning community: Building a professional development website for the AMEP. *Prospect* Vol. 15, No. 3, 65-80.

Jarvis, G. A. (1968). A behavioral observation system for classroom foreign language skill acquisition activities. *Modern Language Journal, 52, 335-341.*

Jarvis, J (1996). Using diaries for teacher reflection on in-service courses. In Hedge, T., & Whitney, N. (Eds) *Power, Pedagogy and Practice*, pp. 307-323, Oxford: Oxford

Jasman, A., Payne, L., Grundy, S. & Del Borrello, A. (1998) *Uncovering the knowledge construction of university based teacher educators: What we learn from / with school based practitioners.* Paper presented at the Australian Association for Research in Education Annual Conference, Adelaide.

Johansson, S. (1991). Times change and so do corpora. In Aijmer, K. & Altenberg, B. (Eds.). *English corpus linguistics.* London: Longman.

Johnson, K. (1999). *Understanding language teaching; Reasoning in action.* London: Heinle & Heinle.

Johnson, K. (Ed.) (2000). *Teacher Education.* Alexandria, VA: TESOL.

Johnson, K. (2002). Second language teacher education. *TESOL Matters,* Vol. 12, No. 2, 1 & 8.

Kamhi-Stein, L. D. (2000). Looking to the future of TESOL teacher education: Web-based bulletin board discussions in a methods course. *TESOL Quarterly,* Vol. 34, No. 3, 423-455.

Kascus, M. (1997). Converging vision of library service for off-campus / distance education. *Journal of Library Services for Distance Education,* 1 (1).

Kegan, R. (1982). *The evolving self.* Cambridge, MA. Harvard University Press.

Kennedy, M. (1997). The connection between research and practice. *Educational Researcher, 26*(7), 4-12.

Kleiner, E. (2001). *Preparing to teach at a distance: Using Nicenet's 'Internet Classroom Assistant' to create a community of writers.* http://www.ihets.org/learntech/distance_ed/fdpapers/1998/13.html

Knezevic, A. & Scholl, M. (1996). Learning to Teach Together: Teaching to Learn Together. In Freeman, D. & Richards, J. C. (Eds.). *Teacher Learning in Language Teaching.* Cambridge: CUP.

Knights, S. (1985) Reflection and Learning: The importance of a listener. In Boud, D. Keogh, R. & Walker, D. (Eds.). *Reflection – Turning Experience into Learning.* London: Kogan Page.

Kuhn, T. (1970). *The structure of scientific revolutions.* Chicago: Chicago University Press.

Lakatos, I. (1970). Falsification and the methodology of scientific research programmes. In Lakatos, I. & Musgrave, A. (Eds.) *Criticism and the growth of knowledge.* Cambridge: CUP.

Lange, D. L. (1990). A blueprint for a teacher development program. In Richards, J. & Nunan, D. (1990). *Second Language Teacher Education.* Cambridge: CUP. 245-268.

Lanier, J. E. & Little, J. W. (1986). Research on teacher education. In Wittrock, M. C. (Ed.). *Handbook of research on teaching.* New York: MacMillan. 527-569.

Lave, J. (1988). *Cognition in practice.* Cambridge: CUP.

Lave, J. & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.* Cambridge: CUP.

Lazaraton, A. (1995). Qualitative research in applied linguistics: A progress report. *TESOL Quarterly* Vol. 29, No. 3, 455-472.

Leinhardt, G. (1988). Situated knowledge and expertise in teaching. In Calderhead, J. (Ed.). *Teachers' professional learning.* London: Falmer. 146-168.

Leinhardt, G. (1989) Math lessons: a contrast of novice and expert competence. *Journal for Research in Mathematics Education 20: 52-75* .

Leinhardt, G. & Smith, D. A. (1985). Expertise in mathematics instruction: Subject matter knowledge. *Journal of Educational Psychology. 77/3.* 247-271.

Levinson, S. C. (1983). *Pragmatics.* Cambridge: CUP.

Light, P., Nesbitt, E., Light, V., & White, S. (2000). Variety is the spice of life: Student use of CMC in the context of campus based study. *Computers & Education*, 34, 257–267.

Lincoln, Y. & Guba, E. (1985). *Naturalistic inquiry.* Beverly Hills, CA: Sage.

Livingston, C. & Borko, H. (1989). Expert-novice differences in teaching: A cognitive analysis and implications for teacher education. *Journal of Teacher Education,* 40/4. 36-42.

MacEwan, H. & Bull, B. (1991). The pedagogic nature of subject matter knowledge. *American Educational Research Journal, 28, 316-334.*

MacLeod, G. & McIntyre, D. (1977). Towards a model for microteaching. In MacLeod, G. & Griffiths, R. (Eds.) *Investigations of microteaching.* London: Croom Helm.

Marton, F., Dall'Alba, G. and Beaty, E. (1993). 'Knowledge about learning', *International Journal of Educational Research* 46, 4–11.

Mason, J. (1996). *Qualitative researching.* London: Sage.

Maturana, H. R. (1990). Science and daily life: The ontology of scientific explanations. In Krohn, W., Kuppers, G. & Nowotny, H. (Eds.). *Self-Organization: Portrait of a scientific revolution.* Dordrecht, The Netherlands: Kluwer.12-35.

Maturana, H. & Varela, F. (1992). *The tree of knowledge: The biological roots of human understanding.* London: Shambhala Publications Inc.

Mayer, R. E. (1996). Learners as information processors: Legacies and limitations of educational psychology's second metaphor. *Educational Psychlogist, 31, 151-161.*

McCarthy, M. (1991). *Discourse analysis for language teachers.* Cambridge: CUP.

McGarvey, B. and Swallow, D. (1986). *Microteaching in Teacher Education and Training.* London: Croom Helm.

McGuire, T. W., Kiesler, S. & Siegel, J. (1987). Group and computer-mediated discussion of effects in risk decision making. *Journal of Personality and Social Psychology, 52.* 917-930.

McInerney, W. D. (2001). *Learning to teach via the Internet.* http://www.ihets.org/learntech/distance_ed/fdpap/mcinerny.html

McNamara, D. R. (1991). Subject knowledge and its applications: Problems and possibilities for teacher educators. *Journal of Teacher Education,* 42/4. 243-249.

McTaggert, R. & Kemmis, S. (1983). *The Action Research Planner.* Geelong: Deakin University Press.

Mercer, N. (1995). *The guided construction of knowledge: Talk amongst teachers and learners.* Clevedon: Multilingual Matters.

Miller, R. (1997). *What are schools for? Holistic education in American culture.* Brandon, VT: Holistic Education Press

Morrison, A. & McIntyre, D. (1973). *Teachers and Teaching.* Harmondsworth: Penguin.

Motteram, G. (2005). 'Blended' education and the transformation of teachers: a long-term case study in postgraduate UK Higher Education. *British Journal of Education Technology, Online publication date: 24-Nov-2005.* Downloaded from: http://www.blackwell-synergy.com/doi/full/10.1111/j.1467-8535.2005.00511.x

Motteram, G. & Forrester, G. (2005). Becoming an online distance learner: What can be learned from students' experiences of induction to distance programmes? *Distance Education, Vol. 26, No. 3.* 281-298.

Munby, H. & Russell, T. (1991). Transforming chemistry research into chemistry teaching: The complexities of adopting new frames for experience. In Russell, T. & Munby, H. (Eds.). *Teachers and teaching: From classroom to reflection.* London: Falmer. 90-108.

Mlynarczyk, R. (1998). *Conversations of the mind: The uses of journal writing for second-language learners.* Mahwah, NJ: Erlbaum.

Nardi, B. A. (Ed.). (1996). *Context and consciousness. Activity theory and human-computer interaction.* Cambridge, MA: The MIT Press.

Noddings, N. (1984). *Caring*. Berkley, CA: University of California Press.

Oates, C. (2000). The use of focus groups in social science research. In Burton, D. (Ed.). *Research training for social scientists.* London: Sage. 186-195.

Oevermann, U., Allert, T., Konau, E. & Krambeck, J. (1979). Die methodologie einer objecktiven hermeneutic und ihre allgemeine forschungslogische bedeutung in den sozialwissenschaften. In Soeffner, H. (Ed.). *Interpretative verfahren in den sozial- und textwissenschaften.* Stuttgart: Metzler. 352-434.

Overton, W. F. & Palermo, D. S. (Eds). (1994). *The nature and ontogenesis of meaning.* Hillsdale, NJ: Erlbaum.

Palincsar, A. S. (1998). Social constructivist perspectives on teaching and learning. *Annual Review of Psychology, 45, 345–375.*

Palincsar, A., Magnusson, N., Ford, D. and Brown, N. (1998). Designing a community of practice: principles and practices of the GIsML community. *Teaching and Teacher Education, 14*(1), 5-19.

Palmer, P. (1998). *The Courage to Teach: Exploring the Inner Landscape of a Teacher's Life.* San Francisco: Jossey-Bass.

Pavlov, I. P. (1927). *Conditioned reflexes*. London: Routledge / Kegan Paul.

Pea, R. D. (1993). Practices of distributed intelligence and designs for education. In Salomon, G. & Perkins, D. (Eds.). *Distributed cognitions: psychological and educational considerations.* Cambridge: CUP. 47–87.

Peräkylä, A. (1997). Reliability and validity in research based on tapes and transcripts. In Silverman, D. (Ed.). *Qualitative research: Theory, method and practice.* London: Sage. 201-220.

Pearson, J. (1999). Electronic networking in initial teacher education: Is a virtual faculty of education possible? *Computers & Education,* 32, 221-238.

Perkins, D. N. (1993). Person-plus: A distributed view of thinking and learning. In Salomon, G. (Ed.). *Distributed cognitions. Psychological and educational considerations.* Cambridge: CUP.

Phillips, D. C. (1990). PostPositivist Science: Myths and Realities. In Guba, E. (Ed.). *The paradigm dialog*. Thousand Oaks, CA: Sage.

Piaget, J. (1950). *The psychology of intelligence.* London: Routledge.

Polanyi, M. (1966). *The tacit dimension.* (1983 Reprint). Garden City, NJ: Doubleday.

Politzer, R. L. (1970). Some reflections on 'good' and 'bad' language teaching behaviors. *Language Learning, 20 (1), 31-43.*

Porter, P. A., Goldstein, L. M., Leatherman, J. & Conrad, S. (1990). An ongoing dialogue: Learning logs for teacher preparation. In Richards, J. C. & Nunan, D. (Eds.) *Second language teacher education.* Cambridge: CUP, 227-240.

Preece, J. (2000). *Online communities: Supporting sociability and designing usability.* Chichester: Wiley & Sons.

Putman, R. T. & Borko, H. (2000). What do new views of knowledge and thinking have to say about research on teacher learning? *Educational Researcher* 29/1. 4-16.

Quirke, P. (2001a). Maximising student writing and minimising teacher correction. In J. Burton & M. Carroll, (Eds.) *Journal writing: Case studies in TESOL practices series*. Alexandria, VA: TESOL.

Quirke, P. (2001b). Hearing voices: A reliable and flexible framework for gathering and using student feedback. In J. Edge, (Ed.) *Action Research: Case studies in TESOL practices series*. Alexandria, VA: TESOL.

Quirke, P. & Zagallo, E. (unpublished). *Moving towards truly reflective e-journals.*

Rafaeli, S., & Ravid, G. (1997). Online, Web-based learning environment for an information system course: Access logs, linearity and performance. *ISECON_97,* 92–99.

Reinharz, S. (1992). *Feminist methods in social research.* Oxford: OUP.

Reynolds, M. (Ed.) (1989). *Knowledge base for the beginning teacher.* Oxford: Pergamon.

Richards, J. C. (1990). *The language teaching matrix.* Cambridge: CUP.

Richards, J. C. (1998). *Beyond training.* Cambridge: CUP.

Richards, J. & Lockhart, C. (1994). *Reflective teaching in second language classrooms.* Cambridge: CUP.

Richards, J. & Nunan, D. (1990). *Second Language Teacher Education.* Cambridge: CUP.

Richards, J. C. & Schmidt, R. W. (Eds.). (1983). *Language and Communication.* Harlow: Longman.

Richards, K. (2003). *Being ourselves: Discourse and identity in the language classroom.* Presentation at TESOLArabia Conference, Dubai.

Riel, M. & Fulton, K. (2001). The role of technology in supporting learning communities. *Phi Delta Kappan, Vol. 82, Issue 7.* 518-23.

Ristock, J. & Pennell, J. (1996). Power plays. In Ristock, J. & Pennell, J. (Eds.). *Community research as empowerment.* Oxford: OUP. 65-77.

Rosen, H. (1996). Meaning-Making narratives: Foundations for Constructivist and Social Constructionist psychotherapies. In Rosen, H. & Kuehlwein, K. T. (Eds.). *Constructing realities: Meaning-making perspectives for psychotherapists.* San Francisco: Jossey-Bass. 3-49.

Rosenberg, M. (2001). *e-Learning: Strategies for delivering knowledge in the digital age.* New York: McGraw-Hill.

Rovatti, S. (2005). *Marketing ethics in the knowledge economy era: A survey on the role of knowledge in shaping a new business ethics.* Milan: EffeElle Editori, Cento-Ferrara.

Russell, L. & Wandrei, M. (1996). Narrative and the process of psychotherapy: Theoretical foundations and empirical support. In Rosen, H. & Kuehlwein, K. T. (Eds.). *Constructing realities: Meaning-making perspectives for psychotherapists.* San Francisco: Jossey-Bass. 307-335.

Russell, M. & Sabatini, J. (2001). Technology-mediated professional development: For teachers of English language literacy. *TechKnowLogia* November/December 2001.

Ryle, G. (1949). *The concept of the mind.* London: Hutchinson.

Sachs, J. (1997). Revisioning teacher education. *Unicorn, 23*(2), 46-55.

Sacks, H., Schegloff, E. A. & Jefferson, G. (1978). A simplest systematics for the organisation of turn-taking in conversation. In Schenkein, J. N. (Ed.). *Studies in the organization of conversational interaction.* New York: Academic Press. 7-55.

Säljö, R. (1979). *Learning in the Learner's Perspective: Some Common Sense Conceptions*. Report from the Institute of Education University of Gothenberg, No 76.

Säljö, R. (1999). Learning as the use of tools: A sociocultural perspective on the human-technology link. In Littleton, K. & Light, P. (Eds.). *Learning with computers: Analysing productive interaction.* London: Routledge. 144–161.

Salmon, G. (2000). *E-moderating: The key to teaching and learning online.* London: Kogan Page.

Schaefer, D. R. & Dillman, D. A. (1998). Development of a standard e-mail methodology. *Public Opinion Quarterly,* 62. 378-397.

Schank, R. C. & Abelson, R. P. (1977). *Scripts, plans, goals and understanding.* Hillsdale, N. J.:Erlbaum.

Schank, R. (1998). Horses for courses. *Communications of the ACM, 41, (7).* 23–25.

Schmidt, W. (1997). World-Wide Web survey research: Benefits, potential problems and solutions. *Behaviour Research Methods, Instruments and Computers,* 29, 274-279.

Schön, D. A. (1983) *The Reflective Practitioner: How Professionals Think in Action.* London: Temple Smith.

Schön, D. A. (1987a). *Educating the Reflective Practitioner.* Presentation to the American Educational Research Association, Washington, DC.

Schön, D. A. (1987b) *Educating the Reflective Practitioner: Toward a new design for teaching and learning in the professions.* San Francisco: Jossey-Bass.

Schrum, L. (1995). Educators and the internet: A case study of professional development. *Computers Educ.* Vol. 24, No. 3, 221-8.

Schutz, A. (1962-1973). *Collected Papers Vols. I-III.* The Hague: Martinus Nijhoff.

Schwab, J. J. (1964). The structure of disciplines: Meanings and significance. In Ford, G. W. & Pugno, L. (Eds.). *The structure of knowledge and the curriculum.* Chicago: Rand McNally.

Schwandt, T. (2001). *Dictionary of qualitative inquiry: second edition.* Thousand Oaks, CA: Sage.

Scribner, S. (1984). Studying working intelligence. In Rogoff, B. & Lave, J. (Eds.). *Everyday cognition: Its development in social context.* Cambridge, MA: Harvard University Press. 9-40.

Searle, J. R. (1979). *Expression and meaning.* Cambridge: CUP.

Selwyn, N. & Robson, K. (1998). Using e-mail as a research tool. *Social Research Update Online,* Issue 21, http://www.soc.surrey.ac.uk/sru/SRU21.html

Shepard, L. A. (2000). *The Role of Classroom Assessment in Teaching and Learning.* Los Angeles, CA: National Center for Research on Evaluation, Standards, and Student Testing.

Shin, S. J. (2003). The reflective L2 writing teacher. *ELT Journal, 57*(1), 3-11.

Shulman, L. (1986). Paradigms and research programs in the study of teaching: A contemporary perspective. In: Wittrock, M. (Ed.). *Handbook of research on teaching.* New York: Macmillan. 3-36.

Shulman, L. (1986). Those who understand: knowledge growth in teaching. *Educational Researcher 15, 4-14*

Shulman, L. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review,* 57/1. 1-22.

Shulman, L. (1988). The dangers of dichotomous thinking in education. In Grimmet, P. & Erickson, G. (Eds.) *Reflection in teacher education.* New York: Teachers College Press. 31-39.

Silverman, D. (ed.) (1997). *Qualitative research: Theory, method and practice.* London: Sage.

Silverman, D. (2000). *Doing qualitative research: A practical handbook.* London: Sage.

Simon, Y. R. (1980). *A general theory of authority.* Notre Dame, IN: University of Notre Dame Press.

Sinclair, J. & Brazil, D. C. (1982). *Teacher talk.* Oxford: OUP.

Sinclair, J. & Coulthard, R. (1975). *Towards an analysis of discourse: The English used by teachers and pupils.* Oxford: OUP.

Skinner, B. F. (1953). *Science and Human Behavior.* New York: Macmillan.

Skinner, B. F. (1957). *Verbal behaviour.* New York: Appleton-Century-Crofts.

Smith, K. & Gunderson, M. (2000). Building an effective online course-development community. *Educause,* September/October 2000, 12-13.

Smyth, J. (Ed.). (1987). *Educating teachers: Changing the nature of pedagogical knowledge.* New York: Falmer Press.

Song, K.-S., Hu, X., Olney, A. & Graesser, A. (2004). A framework of synthesizing tutoring conversation capability with web-based distance education courseware. *Computers & Education, 42.* 375–388.

Spears, R. & Lea, M. (1992). Social influence and the influence of the social in computer-mediated communication. In Lea, M. (Ed.). *Contexts of computer-mediated communication.* Hemel Hempstead: Harvester Wheatsheaf.

Stacey, E. (2001). *The trials, tribulations and triumphs of teaching with technology: coping with computer mediated communication in distance education.* Deakin University Online at: http://www.deakin.edu.au/fac_edu/edonline/estacey/ODLAA.html

Stake, R. (1994). Case studies. In Denzin, N. & Lincoln, Y. (Eds.) *Handbook of qualitative research.* Thousand Oaks, CA: Sage.

Stenhouse, L. (1975). *An introduction to curriculum research and development.* London: Heinemann.

Stern, H. H. (1980). Directions in foreign language curriculum development. In American Council on the Teaching of Foreign Languages. *Proceedings of the National Conference on Professional Priorities.* Boston. Hastings-on-Hudson: ACTFL Materials Centre. 12-17.

Stevens, V. (2005). Creating online communities. *TESOLArabia Perspectives, Vol. 12, No. 2, January. pps.6-11*

Stevenson, N. (2000). Questions of hermeneutics: Beyond empiricism and post-modernism. In Burton, D. (Ed.). *Research training for social scientists.* London: Sage. 21-32.

Stones, E. & Morris, S. (1972). *Teaching Practice: Problems and perspectives.* London: Methuen

Strauss, A. L. (1987). *Qualitative analysis for social scientists.* Cambridge: CUP.

Strauss, A. L. & Corbin, J. (1990). *Basics of qualitative research.* Newbury Park, CA: Sage.

Streibel, M. J. (1994). Misattributions about situated learning. *Educational Technology,* October, 14-16.

Strijbos, J. W., Martens, R. L. & Jochems, W. M. G. (2004). Designing for interaction: Six steps to designing computer-supported group-based learning. *Computers & Education, 42, 403-424.*

Stroh, M. (2000). Qualitative interviewing. In Burton, D. (Ed.) *Research training for social scientists.* London: Sage. 196-214.

Swales, J. M. (1990). *Genre analysis.* Cambridge: CUP.

Thorndike, E. L. (1911). *Animal intelligence: Experimental studies.* New York: MacMillan.

Titscher, S., Meyer, M., Wodak, R. & Vetter, E. (2000). *Methods of text and discourse analysis.* London: Sage.

Todorov, T. (1990). *Genres in discourse.* Cambridge: CUP.

Tolmie, A. & Boyle, J. (2000). Factors influencing the success of computer mediated communication (CMC) environments in university teaching: A review and case study. *Computers & Education, 34.* 119-140.

Tripp, D. H. (1987). Action research and professional development. In Hughes, P. (Ed.), *Better teachers for better schools.* Carlton, Victoria, Australia: Australian College of Education.

Tsui, A. B. M. (2003). *Understanding expertise in teaching.* Cambridge: CUP.

Tsui, A. B. M. & Nicholson, S. (1999). Hypermedia database and ESL teacher knowledge enrichment. *Journal of Information Technology for Teacher Education,* 8/2. 215-237.

Underhill, A. (1993). Awareness: the instrument and the aim of experiential research. In Edge J. & Richards K. (Eds). *Teachers Develop Teachers Research.* Oxford: Heinemann.

Valette, R. M. (1971). Evaluation of learning in a second language. In Bloom, B. S. et al. (Eds.). *Handbook of formative and summative evaluation of student learning.* New York: McGraw-Hill. 817-853

van der Meij, H. (2002). Email use in elementary school: an analysis of exchange patterns and content. *British Journal of Educational Technology.* Vol. 30 No, 2. 189-200

van Lier, L. (1988). *The classroom and the language learner.* London: Longman.

Van Rossum, E. J. & Schenk, S. M. (1984). 'The relationship between learning conceptions, study strategy and learning outcome', *British Journal of Educational Psychology* 54, 78–83.

von Glaserfeld, E. (1984). An introduction to radical constructivism. In Watzlawick, P. (Ed.). *The invented reality: How do we know what we believe know? Contributions to constructivism.* New York: W. W. Norton.17-40.

Vygotsky, L. S. (1962). *Thought and language.* Cambridge, Mass.: MIT Press.

Vygotsky, L. S. (1978). *Mind in society.* Cambridge, Mass.: MIT Press.

Wadsworth, B. (1989). *Piaget's theory of cognitive and affective development.* London: Longman.

Wallace, M. J. (1991). *Training foreign language teachers: A reflective approach.* Cambridge: CUP.

Wallace, M. (1996). Structured reflection: The role of the professional project in training ESL teachers. In Freeman, D. & Richards, J. C. (Eds.). *Teacher learning in language teaching.* Cambridge: CUP. 281-294.

Wallace, M. J. (1997). *Action Research for Language Teachers.* Cambridge: Cambridge University Press.

Watson, J. B. (1913). Psychology as the Behaviourist views it. *Psychological Review 20: 158-77.*

Webb, S. (2000). Feminist methodologies for social researching. In Burton, D. (ed.). *Research training for social scientists.* London: Sage. 33-48.

Webster, J. & Hackley, P. (1997). Teaching effectiveness in technology-mediated distance learning. *Academy of Management Journal,* Vol. 40, No. 6, 1282-1309.

Wegerif, R. (1998). The social dimension of asynchronous learning networks. *JALN, Vol. 2, Issue 1.*

Wenger, E., McDermott, R. & Snyder, W. M. (2002) *Cultivating communities of practice: A guide to managing knowledge.* Boston: Harvard Business School Press.

Wertsch, J. V. (1991). *Voices of the mind. A sociocultural approach to mediated action.* Cambridge, MA: Harvard University Press.

Wetherell, M. & Potter, J. (1988). Discourse analysis and the identification of interpretative repertoires. In Antaki, C. (Ed.). *Analysing everyday explanation.* London: Sage.

Wetherell, M., Taylor, S. & Yates, S. (2001). *Discourse as data: A guide for analysis.* London: Sage.

Williams, H. & Meredith, E. (1996). On-line communication patterns of novice internet users. *Computers in the schools 12 (3), 21-31.*

Williams, M. (2001). *Theory and practice in teacher education: mind the gap.* Paper given at CTELT conference 2001. Dubai.

Williams, M. & Burden, R. L. (1997). *Psychology for language teachers: A social constructivist approach.* Cambridge: CUP.

Wilson, J. (2001). The loneliness of the long-distance learner. *IATEFL Issues* Oct-Nov 2001, 12.

Wilson, S. & Wineburg, S. (1988). Peering at history through different lenses: The role of disciplinary perspectives in teaching history. *Teachers College Record,* 89/4. 525-539.

Wilson, S. M., Shulman, L. S. & Richert, A. E. (1987). 150 different ways of knowing: Representations of knowledge in teaching. In Calderhead, J. (Ed.). *Exploring teacher thinking.* London: Cassell. 104-124.

Wineburg, S. S. & Wilson, S. M. (1991). Subject-matter knowledge in the teaching of history. In Brophy, J. (Ed.). *Advances in research on teaching, Vol. 2.* London: JAI Press. 305-348.

Winiecki, D. (1999). Keeping the thread: Adapting conversational practice to help distant students and instructors manage discussions in an asynchronous learning network. *DEONEWS,* Vol. 9, No. 2.

Wink, J. & Putney, L. (2002). *A Vision of Vygotsky.* Boston, MA: Allyn & Bacon

Winkler, G. (2001). Reflection and Theory: Conceptualising the gap between teaching experience and teacher expertise. *Educational Action Research, Vol.9, No. 3.* 437-450

Winter, E. O. (1977). A clause-relational approach to English texts: A study of some predictive lexical items in written discourse. *Instructional Science, 6 (1), 1-92.*

Wolcott, H. F. (1990). *Writing up qualitative research.* Newbury Park, CA: Sage.

Woods, D. (1996). *Teacher cognition in language teaching: Beliefs, decision-making and classroom practice.* Cambridge: CUP.

Woods, P. (1987). Life histories and teacher knowledge. In Smyth, J. (Ed.). *Educating teachers: Changing the nature of pedagogical knowledge.* New York: Falmer Press. 121-136.

Woolfolk, A. E. (1998). *Educational psychology.* Boston, MA: Allyn & Bacon.

Yates, S. J. (1996). Oral and literate linguistic aspects of CMC discourse: A corpus based study. In Herring, S. (Ed.). *Computer-mediated communication: Linguistic, social and cross-cultural perspectives.* Amsterdam: John Benjamins.

Yates, S. J. (2000). Computer-mediated communication: The future of the letter? In Barton, D. & Hall, N. (Eds.). *Letter writing as a social practice.* Amsterdam: John Benjamins.

Yates, S. J. (2001). Researching internet interaction: Sociolinguistics and corpus analysis. In Wetherell, M. et al. (Eds.). *Discourse as data.* London: Sage.

Yeatman, A. (1996). The roles of scientific and non-scientific types of knowledge in the improvement of practice. *Australian Journal of Education, 40*(3), 284-301.

Zeichner, K. M. (1983). Alternative paradigms for teacher education. *Journal of Teacher Education, 34: 3-9.*

Zeichner, K. M. (1994). *Beyond the divide of teacher research and academic research* Paper presented at the Keynote address at the annual meeting of the Australian Association of Research in Education NSW, University of Newcastle.

Zeichner, K. M. & Liston, D. P. (1996). *Reflective Teaching: An Introduction.* Mahwah, NJ: Lawrence Erlbaum.

APPENDIX 1
THEORY MEMO 11

USER 1.22 (D. - 2003)

a) **Open Coding –**

1. What categories are suggested by the email segments?

Social
Site Feedback

2. What subcategories are evident under each category in the segments?

Social: Opening / Closing / Study
Site Feedback: Request / Thanks / Feedback

b) **Axial Coding –**

1. What linguistic elements determine which category a segment matches?

Social:
- Opening – Hi / Hello / Dear
- Study – MSc / DL / Aston / Jane
- Closing – all the best / best wishes / best / name

Site Feedback:
- Request – help me out / give your comments
- Thanks – thanks
- Feedback – my comments / filled in / my responses

2. What roles can be evidenced in each category?

Social: Professional colleagues
Site Feedback: User to Developer

3. What is the result of the exchanges under each category?

Social: Improved collegiate relationship
Site Feedback: Improved Site

c) **Selective Coding –**

1. What is the most striking feature of this user's data and analysis?

The predominance of Site Feedback categories.

2. What area needs the closest further investigation?

Only the need to see how many other exchanges show a predominance of a specific category.

Make sure that the central theme actually reflects the purpose of the study

Ensure that phenomena represented again and again in the data are both considered and incorporated.

USER 1.23 (M. - 2003)

a) **Open Coding –**

1. What categories are suggested by the email segments?

Social
Site Registration
Knowledge Seeker
Site Feedback

2. What subcategories are evident under each category in the segments?

Social: Opening / Closing / Study
Site Registration: Register / Thanks
Knowledge Seeker: Query / Thanks / Response
Site Feedback: Request / Thanks / Feedback

b) **Axial Coding –**

1. What linguistic elements determine which category a segment matches?

Social:
- Opening – Dear / Hi
- Closing – name / regards / all the best
- Study – DL / Jane

Site Registration:
- Register – register me /
- Thanks – Thanks

Knowledge Seeker:
- Query – tell me more about /
- Thanks – thanks / thank you
- Response – see below /

Site Feedback:
- Request – help me out / give your comments
- Thanks – thanks
- Feedback – hope this will be /

2. What roles can be evidenced in each category?

Social: Professional Colleagues
Site Registration: New User to Developer
Knowledge Seeker: User to 'knowing' developer
Site Feedback: User to Developer

3. What is the result of the exchanges under each category?

Social: Improved communication
Site Registration: Increased number of registered users
Knowledge Seeker: New knowledge for user
Site Feedback: Improved Site

c) **Selective Coding –**

1. What is the most striking feature of this user's data and analysis?

Are the users who registered necessarily new? Would have to ask the registered users.
Is the knowledge sought and received necessarily 'new'?

2. What area needs the closest further investigation?
Follow up with users – is this required for the study at this stage?

Make sure that the central theme actually reflects the purpose of the study
Ensure that phenomena represented again and again in the data are both considered and incorporated.

USER 1.24 (JakeA - 2003)

a) **Open Coding –**

1. What categories are suggested by the email segments?

Social
Site Registration
Site Feedback

2. What subcategories are evident under each category in the segments?

Social: Opening / Closing / Study / local reference
Site Registration: Register / Thanks – confirmation
Site Feedback: Request / Feedback (promise) / Thanks

b) **Axial Coding –**

1. What linguistic elements determine which category a segment matches?

Social:
- Opening – Dear / Hi
- Closing – cheers / keep in touch / take it easy / name / all the best
- Study – MSc / FND
- Local reference - home

Site Registration:
- Register – on the database /
- Thanks /confirmation - thanks

Site Feedback:
- Request – let me know / help me out
- Feedback (promise) – more feedback /sorry for the delay
- Thanks – thanks / thank you

2. What roles can be evidenced in each category?

Social: professional colleagues
Site Registration: New user to developer
Site Feedback: User to Developer

3. What is the result of the exchanges under each category?

Social: Improved professional relationship
Site Registration: Increased Site Membership
Site Feedback: Improved Site

c) **Selective Coding –**

1. What is the most striking feature of this user's data and analysis?

The use of an apology for giving the feedback.

2. What area needs the closest further investigation?

How implication works in emails such as the apology acting as site feedback thanks to the heading or the attachment.

Make sure that the central theme actually reflects the purpose of the study
Ensure that phenomena represented again and again in the data are both considered and incorporated.

APPENDIX 2

philseflsupport.com USER QUESTIONNAIRE

Dear X,
As I close off my data collection at the end of this year, I hope you can help me gain greater insight into our exchanges by answering the questions below:

General user questions:

1. **How many times have you accessed the site?**
   More than 7 times.

2. **When and why?**
   After I started my Aston MSc. My first aim was to use your website to get information about the modules; then I used the site to help me with my studies, in particular I found it helpful for my code-switching assignment.

3. **How did the site help you? How did you use the site?**
   The website, in general, contained several sections to help any teacher, whether they are doing a masters degree or not. A week ago I used the section on 'Approaches to Reading' as I am doing my Methodology Module on 'the use of graded readers in motivating CD Sem.1 students to read. The information was like a compact book, which gave me an overall picture of what is involved in reading.

4. **How many times have you emailed Phil?**
   More than five times.

5. **When and why?**
   When I first started my Foundation in order to ask questions about the modules.

6. **Were the responses you received helpful? What you expected? How?**
   I found the responses very helpful and encouraging, especially his list of the top ten EFL books. Without this list, finishing the module would have been extremely difficult.

7. **Will you revisit the site? Why (not)?**
   I will continue to visit the site because the site is updated regularly.

8. **What else does the site need?**
   Samples of students' assignments. If I get a good grade for my code-switching assignment, I would be more than happy if my work were displayed.

9. **What would you say was the nature of *your* involvement in the site?**
   I once sent you a website on Discourse Analysis.

10. **Others have suggested that the language in the site and my emails encourages participation. Do you agree?**
    Yes.

    If yes, what language stands out? If no, why not?

Does the language promote reflection and development?
Yes.

11. **In the data analysis, I am aiming to divide emails into categories of: knowledge seeker, knowledge discusser, knowledge provider and user interaction. Your thoughts? Other categories?**

12. **What aspect of your experience with the website should I seek to highlight / prioritise?**
Examples of students' assignments are needed, especially for newcomers.

13. **Your process in using the site. How do think when using the site? What is the effect on your knowledge? How can I try and detail this? Can I?**
Regarding the 'Approaches to Reading' section, the information seems to be general, not detailed. However, it is sufficient to give me a good start.

14. **Do you consider the users of philseflsupport a web community? Why (not)?**
Yes, because we are all trying to get information within the same 'general field' of knowledge.

15. **Do you think that my position as developer gives me an authority that affects our exchanges? If yes, how? If no, why not?**
I see you as a kind of 'Father Christmas of Linguistic knowledge.'

16. **Would you be willing to help with further email interviews where I can follow up on earlier emails? e.g. "you said "xyz – useful" Why do you say this?"**
If yes, please continue

<u>Specific user questions:</u>

17. **In earlier emails, you have said that you found the website "very helpful". Can you detail how you have found it "very helpful"?**
See above example about approaches to reading.

18. **You say you are particularly interested in "student learning strategies". Does the site meet your needs as far as this area is concerned? What else could be uploaded to improve coverage of the area?**
An assignment on student learning strategies would be very useful and, secondly, our students' own thoughts on the subject would also be a great help. Could you also include some questionnaires on students' preferred learning strategies, which we can give our students and publish the results on your site. Teachers, especially newcomers to the Middle East, can use these results to plan their lessons, do their own research etc.

19. Is there anything you want to add?

Could you please add: "Interaction in the Language Curriculum" by Leo Van Lier in your top ten list because it's one of the best Linguistics books I have ever read.

Thanks a million for all your help.
I hope that the site has been useful enough to compensate for the time and effort you have given up to help me with my studies.
Thanks again
Phil ☺☺

APPENDIX 3
KNOWLEDGE-USER DESCRIPTION

Knowledge User
How User 1.29 reported using the site.

4:20pm: I've just logged on to Phil's site. I'm looking for some information on how to write up a dissertation proposal. If I can't find anything on that, I'd settle for some info on writing dissertations in general. I'm wondering now if I'll be successful in my search.

4:23pm: I'm looking over the opening page. I see lots of writing all packed together (which makes me not want to read it), and the blue chart at the top catches my eye...
I'm looking over the four main categories, wondering if what I need can be found there. Hmm... lets see... "Language": perhaps this will have info, but it probably doesn't. "Teaching and Learning": no, this probably has to do with resources for teachers and students. "Planning and testing": definitely not. "Study- Reading & Research": Hmm, this may be it. I'll go here first, and then try "Language" if there's nothing there.
I'm now scanning the rest of the main page to see if there is anything promising... perhaps the Research link... I'll keep that in mind. That seems about it. Ok, off I go into the site, through the "Study- Reading & Research" link.

4:30: There seem to be several promising links here. The "Research" & "Writing Better Assignments" seem to fit the bill. I'll start with "Research", just to see what's there, but I think that the assignments link is what I'm after.

4:32: Several links here catch my eye, but they are off topic, so I make a mental note to check on them later (Don't forget to check Designing & Using Questionnaires, Bobbi's Qualitative Research Place, How to do Research, Resources Room, and Smart Tools, Smart Research)
Actually, How to do Research may have something, so I'll check there.

4:39: Hmm...nice site, but looks like I'll have to buy something eventually. Still, I like the links to DISS writing manuals at Amazon. I'm checking a few of these out. Wow! What a lot of stuff available. I should have guessed. I'll have to check this out later. I'd like something free, for now, and geared toward what I need to do for my Msc. (All this stuff at Amazon is for phd disses).

4:46: Now I'm heading into the Writing Better Assignments category. I'm hoping to find something here that fits my needs.
Oh! Bingo! "Connecting the proposal to the dissertation"- that HAS to be what I'm looking for. I'm checking it out now, hoping against hope that my search is over!

4:48: I begin reading the paper...Yes, this is EXACTLY what I'm looking for!

5:02pm: Oh, wife is home. Gotta take a break.

5:51pm: I'm back. Ok, where was I? Oh yes, that Rossman article. Very good! This is what I've been looking for- a detailed, step-by-step account of how to write a proposal (and its free!).

I've realized that I'm not ready to write a full-blown proposal yet! I didn't know that proposals are many pages long. S. asked me to write one and make 10 copies, but I don't think he meant an actual one. I need to gather ideas first and formulate a problem to investigate. What I can do is use Rossman's template to outline several ideas. I'll go through it and see what I come up with. I'm not doing my DISS yet formally, so all I need to do at the JALT meeting is get a clear handle on my focus. To accomplish that, all I have to do is present some basic outline of my current thinking and then collect feedback.

6:04: I bookmark the Rossman article site for future reference. I click the "Selected Msc TESP Dissertations" link just for a quick look around. Click on Alex Best's dissertation for no reason. Wow. It looks amazing... how can I ever do something like that? Well, I will... Hard to believe. It's nice being able to read some samples. I'm getting an idea of the mountain I'll have to climb. I can't read anymore; my brain will overload!
Oh, one more link catches my eye... the CD diss by Varadi. Since I'm doing TD now, I click on it for a quick look-see. Nice. Perhaps I can use this as a reference for my TD assignment. I bookmark the site in my "TD Sites" folder.

6:19: Just out of curiosity, I begin looking around other parts of the site, just in case something good comes up. Since I've basically gotten what I came looking for, I consider this part of my search icing on the cake. I fist go into "Planning & Testing." No, as I thought, nothing relevant to what I need now, but next time I need to write up a test, I hope I can remember to check here first.
On to "Teaching & Learning." Nothing for my immediate needs, but I click on Teacher Development just to see if there is anything good for my TD assignment. Oh yes, I've been here before. I've already read the CD article by Julian Edge. Well, I can see lots of good stuff, links I've already visited. I'm feeling an urge to get into them, but I resist because I want to stay focused on what I came to do. Before I go, I bookmark the TD section into my bookmarks folder. This will make it easy to return once I get around to doing that project again.
Clicking the "Language" link, I don't see anything useful at the moment. I scan it just to get a "lay of the land." I may need to come back here in the future.

6:28pm: Ok, I've gotten what I came for, and I feel happy. I now know what a dissertation proposal is, and realize that I'm not ready to write one yet. Still, the structure is clear, and I know that it will help me think of my focus. I'm also clear about what I need to do next: write up an outline of my current thinking, bring it to JALT, and collect feedback. I'm sure that having time to talk face to face with everyone (especially S.) will clarify my thinking.

6:30pm: I leave the site.

Post session Reflection:
Well, I hope you can get an idea of how I used your site. I came to it with a specific need, and this greatly helped my experience. Instead of wandering around, I could go in and get what I needed quickly. I was psyched that you had an article about just the thing I

needed. I was also able to realize that there are many books about diss writing out there, and that I should do an Amazon search in the future.
I did poke around the rest of the site a bit and almost got sucked into a huge expenditure of time. It felt like entering this big bookshop with all sorts of interesting things to read. I wanted to spend more time, but I couldn't today.
Also, I felt typing up my thoughts as I went through the site was interesting. It slowed me down, but it did shed light on my thought processes. It also made me pay real close attention to the site's content, which is great. Now I have a much clearer idea of what's what and where. I was able to bookmark some pages for another project (TD assignment) that I'm currently working on. I found stuff I needed even though I wasn't actively looking. Cool.
I can see how your site works with different goals in mind. Had I not had a specific need, I would have poked around, hoping something would catch my eye. As it was, I was clear about what I wanted and was able to retrieve needed info quickly. One thing that may have helped would have been a search function. I would have liked to type in "dissertation proposal" or something, and seen a list of relevant pages. This could have speeded up the search process."

APPENDIX 4
ALL E-MAIL DATA on CD-ROM

The CD-ROM below contains all the email data from all Group One users. All references to names and places have been removed or changed to preserve the identity of the users, and permission from the users has been given to include all the data in this appendix.

The discussion board data is available from:

http://philseflsupport.proboards4.com/index.cgi