PROBLEM UNDERSTANDING WITHIN PSYCHOLOGICAL INTERVIEWING

Jeremy J. Monsen

University College London

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ABSTRACT

This thesis is primarily concerned with how educational psychologists in training (EPITs) develop an accurate and 'high quality' understanding of a teacher's presenting problem, as a consequence of interviewing them. Development was monitored over the course of a one-year training programme in which interviewing and problem-reasoning skills were taught and practised. The development of a range of selected interviewer behaviours and their relationship to the construction of a 'high quality' understanding were assessed. **Study one** surveyed all training courses for educational psychologists in England, Wales and Northern Ireland, to sample perceptions on aspects of interviewing and problem solving and collect information on how these skills are taught. However, there were concerns raised about the validity of the data, and as a result certain areas were explored further in study three. **Study two** undertook a part replication and extension of Robinson and Halliday's (1988) research with experienced counsellors. It investigated the relationship between selected interviewer behaviour, and problem understanding in a longitudinal experimental study of ten EPITs, and eight teachers who acted as controls. The results of this study indicated that, following appropriate training, EPIT's use of accessible reasoning significantly increased during interviews, and was associated with increases in the quality of written analyses of the teacher's presenting problem. **Study two (a)** explored whether the personality characteristics and communication style of the interviewer contributed anything to our knowledge of the processes involved in formulating a 'high quality' understanding. The results suggested that such aspects were not associated with the quality of participants' problem understanding, or with their use of different interview strategies. **Study two (b)** investigated whether training had any impact upon the number and type of hypotheses EPITs used to attribute causal relationships to aspects of the teacher's problem situation. Results showed that there were no significant changes noted in the number of hypotheses offered. However, by the end of training EPITs were significantly more likely than controls to use interactional hypotheses to attribute cause when integrating aspects of the teacher's problem situation. **Study three** explored the reactions of a sample of the course tutors who had been involved in study one to some of the main findings of this thesis. Results question the
validity of some of the data collected in study one and suggest revisions to the conclusions that can be drawn about the ways in which interviewing and problem solving skills are taught. Finally, the contributions and limitations of the thesis are discussed, drawing out the implications for research and practice.
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- "**He tangata maku e ki atu he tangata. Ma mangu, me whero e oti ai te mahi e. Whatungarongaro, he tangata toitu, he whenua. Hutia te rito o te harakeke kei hea to komako e ko? Kia kii mai koe ki ahau he aha te mea nui i te ao maku e ki atu he tangata, he tangata, he tangata "** (excerpt from He Tangata by Oceania, 1999).

- "**Ma te kaha kaora - Kia Kaha!"**
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CHAPTER ONE

INTRODUCTION

"Psychology cannot dispense with experience, nor can experience, if it is to be rational, dispense with psychology. It is possible to make actual practice less a matter of mere experiment and more a matter of reason; to make it contribute directly and economically... because (of) rational, experience. And this the educational psychologist attempts to do by indicating in what directions help is likely to be found; by indicating what kind of psychology is likely to help and what is not likely; and, finally, by indicating what valid reasons there are for anticipating any help at all." (Dewey & McLellan, 1895, cited in Archambault, 1964, p.195-196)

1.1. BACKGROUND TO THE PROBLEM

The British Psychological Society (BPS) is charged with setting the core curriculum for all initial training courses for educational psychologists in England, Wales and Northern Ireland, and in monitoring its implementation and effectiveness on a five yearly cycle. The BPS's core curriculum, under the headings "Background", and "Personal skills and communication", clearly views interviewing and problem solving as being central skills to effective practice. The place of problem solving is given added prominence as an integrating framework with which to guide all other practice. The document states that, while the BPS recognises "that each course brings its own orientation and specialism to training, they should nevertheless adopt a problem-solving approach (BPS Core Curriculum, 1999, p.1).

Such guidelines, however, can be seen to be more prescriptive than they are descriptive. In Argyris' terms (1993a & b) such guidance is stated in general "applicable knowledge" terms, and says very little about what the specific "actionable knowledge" skills are, how they are taught and how they are evaluated. Applicable knowledge is "knowledge that is shown to be relevant to contexts beyond the research context in which..."
it is produced". Applicable knowledge "fits" with the external environment: hence it has external validity. "Actionable knowledge" specifies how "applicable knowledge" can be implemented in everyday life. It specifies the actual behaviour or actions that must be produced if the relevance or fit is to be actualised" (Argyris, 1993b, p.29). Having guidelines stated in prescriptive applicable knowledge terms would probably lead to training courses developing their own unique solutions to address the BPS requirements and guidelines on interviewing and problem solving.

Given the pre-eminent role that interviewing and problem solving play in the work of contemporary educational psychologists (and other related practitioners), it is surprising that very little is published, in actionable knowledge terms, on what models are being promulgated within training courses, what skills underpin these models, how are they taught, and most importantly how effective are they (Reynolds, Gutkin, Elliott & Witt, 1984; Peterson, 1991; Sigston, Curran, Labram & Wolfendale, 1996; Wolfendale, Bryans, Fox, Labram & Sigston, 1992). This lack of primary information provided a rationale for surveying all training courses in England, Wales and Northern Ireland. The information obtained provided a context and a link with the experimental and correlational studies reported within this thesis.

The basic assumption underlying this thesis was that the initial teacher interview with which educational psychologists are routinely involved, represents a complex set of cognitive behaviours involving information-processing strategies. This view sees the interviewer and interviewee as both being actively involved in an inquiry process during the initial interview, as "meaning seekers" and "problem solvers" (Dewey, 1929). This view was supported by certain theoretical models of how experts go about solving complex and ill-structured real-life problems (Argyris, 1982; Argyris & Schön, 1974, 1996; Chi, Feltovich & Glaser, 1981; Chi, Glaser & Farr, 1988; Elstein, Shulman & Sprafka, 1990; Ericsson & Charness, 1994; Ericsson & Lehmann, 1996; Lichtenberg, 1997), and related research into memory (Rose, 1999), cognition, and information processing (Dawson, 1998; Glaser, 1984; Green, 1996; Greeno, 1997, 1998; Schraagen, 1993; Simon, 1973, 1978; Wiley, 1998).

Robinson and Halliday's (1988) research reported a significant relationship between the use of accessible reasoning by a range of experienced school counsellors and
psychologists in New Zealand, and the subsequent quality of their written analyses of clients' presenting problems. Accessible reasoning describes the process by which the interviewer makes explicit to the client their thinking about the information the client has given them during the course of their interview. Such a view was informed by previous theoretical and practical work by Argyris and Schöhn (1974, 1996), and their Model I and Model II frameworks. Within their model of interpersonal problem solving, explicit reasoning is a key strategy. By making thinking and reasoning accessible, it allows both the interviewer and interviewee to check upon the accuracy, relevance and usefulness of the information shared. This is likely to increase the availability of valid information leading to the possibility of a higher quality understanding being developed by the interviewer (and interviewee) (Argyris & Schöhn, 1974, 1996; Argyris, 1982, 1993; Robinson, 1993). This thesis aimed to investigate further the role played by accessible reasoning (explicit reasoning), and other selected interviewer behaviours, in enabling a group of EPITs to reach "high quality" understandings of a teacher's problem. It was assumed that when educational psychologists, and EPITs during their training, assist teachers to solve real-life work-related problems, the quality of such assistance will be dependent upon the interviewer's own ability to understand and reason with the details of the teacher's problem situation.

This view of initial teacher interviews does not mean that effective human relationship skills are seen in any way as being irrelevant, or at best of secondary importance. It is conjectured that little will be achieved if interviewer problem understanding is developed in some sort of detached pseudo-rational manner. Feelings and perceptions are integral and legitimate areas of concern for the interviewer who is trying to understand a client's problem. Interviewers who ignore clients' feelings and perceptions do so at their own peril. However, it is doubtful whether a high quality understanding could be achieved without both effective rational cognitive processing and interpersonal skills.

The emphasis within this thesis is upon the cognitive information-processing aspects operating within the interviewer-interviewee inquiry process. A client is more likely to respond positively, in our terms, by providing the interviewer with more relevant information, including material that may be sensitive or threatening, only if the client
trusts the interviewer. An interviewer who communicates to the client their genuineness in trying to understand their problem, and that they have the competence to do so, is more likely to be perceived positively by the client.

An interviewer who actively involves the client in the process of helping them reach an understanding of their problem, avoids many of the intended and unintended consequences which can follow if judgements (i.e. attributions and evaluations) are not publicly tested out (Argyris & Schöen, 1974, 1996; Argyris 1982, 1993). Interviews that are comprised largely of unilateral and unillustrated assumptions and judgements are more likely to increase misunderstandings and defensiveness in both the interviewee, and the interviewer (Argyris, 1982, 1993). It is likely that involving the client will improve the overall understanding of the problem by both parties. Argyris (1982) suggests that, "the best way to achieve this, is to state our views in ways that allow them to be publicly tested and falsified. To do so, we must make our reasoning explicit, and organise it in such a way that it is testable" (p.xx, included within the introduction to the book).

Within this process of making one's thinking accessible, Argyris (1982) stresses the importance of both parties giving and receiving valid feedback on the accuracy and validity of their views. In discussing feedback the importance of not only cognitive but also interpersonal processes is again stressed: "feedback must have at least two features: it must contain valid information, and it must be communicated in a way that does not make the receiver defensive and hence unlikely to hear the information" (p.96). Accessible reasoning would be one way of enabling the interviewer and interviewee to gain such "critical feedback", and thus potentially lead to greater problem understanding and clarity.

The counselling and interviewing literature is replete with guidelines on the types of interviewer skills needed to assist clients in gaining a better understanding of their problems, so that they can "move on" (Egan, 1994; Dryden, Charles-Edwards & Woolfe, 1989; Lichtenberg, 1997; Hansen, Stevic & Warner, 1986; Woolfe & Dryden, 1996). Such guidelines suggest that the counsellor or interviewer employ primary level skills such as open-ended questions, reflection, paraphrasing and empathy, in an attempt to communicate "that he or she understands or is attempting to understand the client and responds to the client as a genuine human being" (Hansen et al, 1986, p.322). In
addition, there are secondary level skills, such as probing for meanings and patterns, and challenging, or what some refer to as "disputing techniques" (Dryden, 1990). These strategies are used to "explore more deeply the problem or feelings (the client) is trying to express" (ibid, p.322).

The main conclusion reached from surveying this disparate literature is that one of the primary goals of counselling (and interviewing) is for the counsellor to improve the client's understanding of their problem. In fact, in a survey of counsellors the most frequently cited reason for undertaking counselling was to help "the client's self-understanding and self-awareness", and for those who sought counselling it was "the desire for greater understanding of feelings and behaviour", (ibid, p.323). For the purposes of this thesis, the ability to assist a teacher to understand their problem is very much dependent upon the interviewer's own ability and competence to understand that very problem. Competence within this thesis is used very much within Argyris' (1982) terms, that is, "competence may be defined as designing and implementing matches (between intentions and outcomes), including the detection and correction of mismatches. In order to know whether they have implemented a match or corrected a mismatch, people require feedback" (p.96, emphasis added).

Finally, this thesis also explored other factors which might have a bearing upon EPITs' ability to develop accurate problem understanding. The possible mediating effects of interviewer personality characteristics and communication style were investigated. It was hypothesised that these aspects could act as constraints to accurate reasoning, such as the ".... tendency to notice instances that corroborate a favourite belief more readily than those that contradict it" (Dewey, 1933, in Archambault, 1964, p.220). More recent research by Snyder (1981) demonstrated that some people "selectively seek evidence that confirms the hypothesis currently under consideration (reported in Arkes, 1981, p.326). Dewey himself recognised that, "methods alone will not suffice personal dispositions" (ibid, p.223), which could influence the way people construct and interpret information.

Research by Kramer, Rappaport and Seidman (1979) found that, before formal training, those trainee counsellors who scored high on empathy, warmth and openness, tended also to be rated as being more effective during initial interviews, following
training, than those trainees who had lower scores on these personality factors. Though this research does not directly relate to our area of interest it none-the-less makes the point that personality and communication style factors could influence the way and effectiveness with which interviewers go about gaining an understanding of a client’s problem (Mischel & Shoda, 1998).

1.2. OVERVIEW OF THE THESIS

Chapter two provides a review of the literature which builds up a rationale for why the various research studies reported within this thesis were undertaken. Where relevant, the specific hypotheses for each study are detailed in the introductory section of those chapters.

Chapter three reports the results of study one, a descriptive postal questionnaire survey of training courses in England, Wales and Northern Ireland. A questionnaire survey was used as this was considered the best way of collecting information on course tutor perceptions of the importance of interviewing, problem solving, personality and communication style to educational psychology practice, and the teaching strategies and curriculum used. This was the first survey of its kind and provided a useful context for study two, and a baseline for other researchers.

Chapter four reports the results of study two, a longitudinal experimental study. A longitudinal design was chosen as this approach was considered essential to the examination of change and development, in response to learning opportunities in interviewing, problem solving, and other skills related to initial interviews with teachers.

Chapter five reports the results of study two (a), a correlational study of personality and communication style characteristics, and their relationship to selected data derived from study two on interviewer behaviours and the quality of their subsequent problem understanding.

Chapter six reports the results of study two (b) which investigates the possible effects that training may have on the number and type of hypotheses which EPITs use to attribute causation to aspects of the teacher’s problem situation in their written problem analyses.
Chapter seven reports the results of study three a descriptive investigation of course tutors' reactions to some of the main findings of this thesis. It employed a semi-structured face-to-face interview format and provided a means of drawing the various investigations reported within thesis to a conclusion.

Chapter eight discusses the main contributions that the five studies have made to both theoretical and applied questions, presents their limitations, and outlines the major implications for further research and practice.
CHAPTER TWO

REVIEW OF THE LITERATURE

2.1. OVERVIEW AND INTRODUCTION

This chapter begins with an overview of the context within which the training of educational psychologists in England, Wales and Northern Ireland occurs. The role of problem-solving theories within educational psychology practice are critiqued, with emphasis being given to what these theories have to say about how a "high quality" understanding of a teacher's problem is achieved by an interviewer. It then critiques the progression-by-steps approach to problem solving with reference to information-processing theory (e.g., Newell & Simon's (1972) problem-space theory). Information-processing theory is presented as a means of understanding how educational psychologists may approach the types of complex and ill-defined problems with which they work. Then the characteristics of these ill-defined problems are described, with attention being given to the contribution that hypothesis-testing frameworks could make to the problem-understanding task. The characteristics of expert and novice problem solvers are discussed, before highlighting aspects of Argyris and Schön's work (1974, 1996), as it precursors research which is then described by Robinson and Halliday (1988) on accessible reasoning. The problem-analysis model is outlined. This framework teaches accessible reasoning and other related skills to EPITs, and is used to inform and unify teaching on the University College London training course from which the EPIT sample was drawn for the research studies outlined in this thesis. Finally an alternative framework described by Petty, Heesacker and Hughes (1997) is outlined and critiqued. In addition to the references acknowledged within this chapter some of the material included has appeared in different form in earlier publications (Gill & Monsen, 1996; Monsen, Graham, Frederickson & Cameron, 1998; Cameron & Monsen, 1998; Rees & Monsen, 2000).

One of the most important activities that educational psychologists (and related
practitioners) undertake is to assist teachers to solve important real-life work-related problems (Cole & Siegel, 1990; Frederickson, Webster & Wright, 1991; Robinson & Halliday, 1988; Miller, Leyden, Steward-Evans & Gammage, 1992; Sigston et al, 1996). Whether this assistance is delivered primarily via counselling, consultation or case work models of practice, all can be seen to involve problem-reasoning and solving processes. In each context, the relationship between the educational psychologist and the teacher is focused upon transforming specific undesirable aspects of the presenting problem situation into more desirable states (Reynolds et al, 1984; Robinson & Halliday, 1988; Rosenfield, 1987).

Within the range of problem-solving approaches used by educational psychologists, the common element to all is the importance placed upon understanding the client's problem. It is argued that the effectiveness of any assistance provided to teachers by educational psychologists will largely be dependent upon their competence and ability in analysing and reasoning about a teacher's presenting problem situation. Although training courses and associated statutory and professional bodies (e.g., the BPS and the Association of Educational Psychologists) acknowledge the importance of obtaining an accurate understanding of a teacher's problem, there is little published literature on how such an understanding is achieved, how it develops, and what factors support or hinder its development (Argyris, 1993, 1999; Maliphant, 1998; Robinson and Halliday, 1987, 1988).

2.2. THE TRAINING OF EDUCATIONAL PSYCHOLOGISTS

"The profession of educational psychology is undergoing a period of reflection and change. The Green Paper has indicated a commitment by the government that, by the year 2002, 'there will be a national agreement on ways of reducing the time spent by educational psychologists on statutory assessments and maximising their contribution in the classroom, and the training necessary for their developing role' (DfEE, 1997, p.68) (Imich, Kerfoot, Lyons & Sigston, 1999, p.19).
Within England, Wales and Northern Ireland the practice of educational psychology has become increasingly tied to the agendas of a range of, often competing and hostile, stakeholders. This has resulted in greater emphasis being placed upon accountability to employers and clients, on the development of coherent policies within educational psychology teams, and on consistency between the service delivered by different educational psychologists within and between services. In the remainder of this section we will briefly consider some perspectives on training from the USA, and then two themes pertinent to training in England, Wales and Northern Ireland will be discussed; the relationship between training and practice, and the relationship between psychological theory, research and practice (Farrell & Lunt, 1995; Frederickson et al, 1998; Lunt, 1996, 1998).

2.2.1. Perspectives on training from the United States of America

Within Europe there have been moves to try and facilitate the movement of applied psychologists between the various member countries. Within the European Union applied psychologists are usually regulated at a national level. The minimum number of years that a European psychologist will spend at the university varies from between four to six years, with five years being usual. In most countries this level of training is roughly equivalent to a masters degree, although in Europe such a degree almost always has a strong practical component (i.e. practicum and internship).

Unlike the United Kingdom and Europe the USA has had a much longer history of training applied psychologists at both masters and doctoral levels. Within the USA there are a vast variety of university based training models which have evolved since 1947 to structure the teaching and practice of doctoral level training within all branches of applied psychology.

In the USA the need to train psychologists emerged from demands made by various interest groups (education, health, justice and social welfare sectors), and from large infusions of federal monies following World War II. The 1949 conference on training held in Boulder, Colorado set the "scientist-practitioner" as the dominant model of training which has guided thinking and practice to the present day. This model states that applied psychologists operate as a distinct specialism under the umbrella of
psychology as an academic discipline. In practice such a view has been interpreted by training course tutors to mean that applied psychologists should be trained in the methods (e.g., scientific research paradigm and methods) and knowledge base in psychology, and in the specific skills needed to practice as an applied practitioner. This training has usually been undertaken within the format of a research degree at Ph.D. level (Barlow, Hayes & Nelson, 1984).

During the 1950's and 1960's there was a great expansion of applied Ph.D. programmes based upon the "scientist-practitioner" model. However, a growing body of research suggested that practising psychologists did not use the majority of the skills they had been taught. In practice very few conducted research after graduation, though they did apply to a greater or lesser extent frameworks based upon scientific principles to guide critical thinking and practice. Some of the course tutors began to question the appropriateness of the "scientist-practitioner" model to guide training and practice. They argued that it was costly in terms of the time needed to train such skills and in most cases was an irrelevance to the actual demands of applied settings (Garfield & Kurtz, 1976).

What emerged from this debate was an alternative "scholar-practitioner" training model. This framework placed much less emphasis upon logical empiricist research skills, and expanded the focus on to competency based training and making direct links with practice. Such training occurred within applied doctorate rather than Ph.D. programmes, and are generally referred to as Psy.D. programmes.

The view that an applied psychologist could be seen to be an educated "consumer" of research rather than a "producer" of research gained credibility as did the view that both types of training produced "practitioners" of psychology. The practitioner-model, as reflected in the Psy.D. programmes began to expand slowly from about the early 1960's. It is important to note that even now university departments still offer both Ph.D. and Psy.D. degrees.

By 1974 the Vail conference on the training of applied psychologists concluded that US psychology had developed to such an extent that specialist programmes for psychologists could be seen for scientists, practitioners and scientist-practitioners. This conference formally adopted the "scholar-practitioner" model and stated that "where primary emphasis in training and function is upon direct delivery of psychological service
and the evaluation and improvement of those services, the Doctor of Psychology degree is appropriate. Where the primary emphasis is upon the development of a new knowledge in psychology, the Ph.D. is appropriate" (Korman, 1974, p.443).

Currently there are important divisions beginning to be seen between those who assert that the Ph.D. is "the" model for the scientist-practitioner, and the Psy.D. being seen as the best model for applied psychologists. However, both models can be criticised as being deficient. Research has highlighted that the two models do not actually produce significantly different types of practitioners. Snepp and Peterson (1988) found in their comparative study of interns from these two groups that they did not significantly differ in terms of core skills or competencies. Ratings were made by the interns' placement supervisors.

Although doctoral training is the dominate model in the USA, masters degree programmes still endure. There are still states where it is possible to practice psychology or related functions with a masters degree. In some states such practice is limited to specific areas such as school psychology, while in other states the practice of masters level providers is that of an "associate" or "assistant", who must work under the guidance of a doctoral level supervisor.

2.2.2. The relationship between training and practice in England, Wales and Northern Ireland

Currently, to train as an educational psychologist in England, Wales and Northern Ireland, an individual must have undertaken a first degree in psychology (or its equivalent), trained as a teacher, and have completed at least two years teaching experience (or its equivalent). The training course is at a one-year masters degree level, with a further post-training year leading to chartered psychologist status. Within this context the training year is seen as the beginning of an on-going process of development. This is recognised in the broad aims identified by all training courses. For example, at University College London (UCL), the stated aim of their course is "to enable educational psychologists in training to effectively integrate theory and practice in becoming competent, creative and accountable practitioners". The relationship between training and practice is recognised in the Government's Green Paper: "Changes in the
balance in the work of EPs will have implications for their training. New patterns of training will be needed to reflect their developing role. (Department for Education and Employment, 1997, p.67).

When one compares and contrasts international and local level provisions for the training of educational psychologists, the area is characterised by a lack of coherence and consistency in the solutions being implemented (Eraut, 1994). For example, in New Zealand there has been an integrated period of three-year training, leading to a post-masters level diploma, for over 30 years, though the national system of training educational psychologists in New Zealand is currently under major review. In most states in the United States of America there is a tiered system of registration from masters level assistant psychologist status (sometimes referred to as psycho-metricians), to full doctoral level registration as a practising psychologist.

Currently in England, Wales, Northern Ireland, New Zealand and some states of Australia, there are attempts to remove teacher training as a prerequisite for entry to courses. Yet in France, some states in the United States of America, and Eastern Europe they are attempting to head in the opposite direction (Eraut, 1994). In England and Wales clinical psychology training has for the most part moved from masters degree level to a three-year applied doctorate. This situation has put increased pressure upon educational psychology to do the same, for fear of becoming more marginalised, and being perceived as a second rate "Cinderella" service (Frederickson et al, 1998).

Educational psychology is currently going through one of the most significant changes to its practice since the implementation of the 1981 Education Act. Decisions made by Government within the next 12 months will determine the broad parameters of roles well into the first quarter of this century. Qualified support has been expressed for changes in the balance of the work of educational psychologists, moving away from involvement in administrative "gate-keeping" tasks at Stage 4 of the Code of Practice, and towards the provision of a more coherent integrated way of applying psychological expertise (Miller & Leyden, 1999). Instead of gate-keeping functions there is a renewed need for educational psychologists to be involved in early intervention, school effectiveness, inclusion, literacy and numeracy, and in direct support in complex cases, such as family-based work and counselling (DfEE, 1997).
In 1984 the then Department for Education and Science (DES), the University Grants Council (UGC), the Local Government Association (LGA), the BPS and the Association of Educational Psychologists (AEP) agreed that the period of initial training for educational psychologists needed to be increased and recommended a move from one year to two years' training (DES, 1984). This recommendation was never implemented, and the resultant dilemma has been concealed in many Local Education Authorities (LEAs) by involving educational psychologists in predominately statutory assessment functions. Paradoxically this child assessment role is very reminiscent of the type of work undertaken by the very first educational psychologists in the United Kingdom. In the late 1940s they administered psycho-educational tests to assign children to appropriate special educational provision (Maliphant, 1998). The proposed changes to the role of educational psychologists, as outlined in the Green Paper and by Miller and Leyden (1999), have once again brought into focus the insufficiency of current initial training provided in England, Wales and Northern Ireland.

As a result of these challenges, and indeed threats, has come renewed interest within educational psychology in the behaviours which make up competent applied practice. The idea is that such information, once identified, could be incorporated into training courses, and provide guidelines for evaluating practice both during and subsequent to training. It could be argued that such a perspective when applied to complex practice is naïve and simplistic (Morgan, 1998; Searle, 1999; Stevenson & Cooper, 1997). It is acknowledged that there are controversies surrounding competency-based research. However, it will be assumed in this thesis that it is possible to define and measure specific behaviours which are associated with particular outcomes (Morgan, 1998). For example, that the increased use of accessible reasoning by interviewers during initial teacher interviews is related to higher quality understandings being produced.

2.2.3. THE RELATIONSHIP BETWEEN PSYCHOLOGICAL THEORY, RESEARCH AND PRACTICE

Applied educational psychology has long suffered from a lack of a robust and relevant research base, and a gulf between university-based researchers and field-based
practitioners (Robinson, 1993, 1998). As a result of this dilemma new techniques and approaches may gain widespread popularity and use amongst practitioners despite limited or no evidence regarding their effectiveness. Robinson (1998) argues that the majority of research questions being proposed by university-based educational psychology researchers (and other related colleagues) would not be identified as priorities by practitioners. She states that, if it is the intention of researchers to have a genuine impact upon applied practice, then alternative methodologies need to be employed, such as problem-based methodology (Robinson, 1998). For those researchers who hope that their research will contribute to a real change in practice (i.e. generating both applicable and actionable knowledge) then a much closer relationship between themselves and practitioners is needed (see Robinson, 1993, 1998; and Meyer, Park, Grenot-Scheyer, Schwartz & Harry, 1998).

The late early part of the 21st century is proving to be a formative period for applied educational psychology in United Kingdom. Clearly, there will always be a role for a group of practitioners who are able to make an effective contribution to assisting parents (carers), school staff and administrators deal with the policy, organisational, learning, behaviour and social-emotional difficulties surrounding childhood and adolescence. Whether this assistance is applied at an individual, group or systems level is, in some senses, secondary to the need for practitioners to demonstrate that they do in fact have a unique, relevant and potent contribution to make. The future for educational psychologists will be fought and decided largely against these criteria (Monsen & Swanson, submitted).

2.3. PROBLEM-SOLVING WITHIN EDUCATIONAL PSYCHOLOGY PRACTICE

Interviewing clients is used by educational psychologists (and other applied psychologists) to achieve a number of purposes ranging from gathering straightforward information, such as a case histories, collecting consumer feedback, assisting individuals cope with crises like death or trauma, or work-related issues requiring resolution, such
Figure 2.1 Problem-solving frameworks

Operations involved in effective problem solving

a) General orientation.
b) Problems definition and formulation.
c) Generation of alternatives.
d) Decision making.
e) Verification.

Source: D'Zurilla and Goldfield (1971)

A problem-centered approach to the delivery of applied psychological services

1. a) List assets.
   b) List problems, complaints, difficulties.
2. Select a priority problem.
3. Specify the priority problem operationally.
4. Collect data relevant to the problem.
5. Identify probable factors contributing to the problem.
6. Specify a desired outcome.
7. Plan possible interventions. Select the best alternative.
8. Implement intervention plan.
9. Record and monitor the effects of the agreed intervention.
10. If outcome is successful, select the next priority from list (item 1) or agree that no further intervention is necessary. If outcome is unsuccessful, repeat steps 4-9.

Source: Cameron and Stratford (1987)

A basic sequence for problem solving

1. Identifying the problem.
2. Analysing the problem.
4. Designing plans for actions.
5. Forecasting consequences of intended actions.
6. Taking action.
7. Evaluating the actions.

A procedure for helping a team of educators to solve organisational problems in schools.

Source: Schmuck et al (1972)

Problem-solving sequence

1. Define and clarify the problem.
2. Analyse the forces impinging on the problem.
4. Evaluate and choose among alternatives.
5. Specify consultee and consultant responsibilities.
6. Implement the chosen strategy.
7. Evaluate the effectiveness of the action and recycle if necessary.

A problem-solving model of school-based consultation.

Source: Gutkin and Curtis (1982)

Teaching children interpersonal problem-solving skills

1. Problem-solving orientation.
2. Problem identification and goal setting.
4. Consideration of consequence and decision making.
5. Making plans and checking for success.
6. Integration of problem-solving behaviour.

Source: Thacker (1982)
as a teacher wanting assistance with a challenging child in his or her class (Edenborough, 1996). It is this latter interview situation and the problem-reasoning processes used which are explored within this thesis.

Pearson and Howarth (1982), viewed applied psychology "as a problem-solving profession" (p.375). The interpersonal and technical skills required in gathering information about a client's problem, implementing and evaluating a solution are similar in all branches of applied psychology. Initial training provides psychologists with core skills (including interviewing and problem-solving frameworks), which can be used to respond to a wide range of client requests.

When developing a core curriculum for EPITs, and specifying the key competencies for practising educational psychologists, the working group set up by the BPS (DECP Standing Committee on Core Curriculum and Competencies), faced the question, "What discriminates the work of educational psychologists from that of other support personnel?" The conclusion (or assumption) reached by this committee was that educational psychologists not only draw upon a broad knowledge base within psychological theory and research, but also employ a systematic approach to solving problems. In this way, educational psychologists are able to understand and manage human problems from a more holistic perspective.

Many of those involved with initial training in Britain have written about the central place of problem solving as a core competency (Cameron & Stratford, 1987; Frederickson et al, 1991; Miller et al, 1992; Monsen et al, 1998). Cameron and Stratford (1987) describe a problem-solving framework which is detailed and comprehensive, both in terms of the sequence of steps which make up their problem-centred approach and the range of contexts in which it is intended to be applied (such as individual assessment, consultation, and work at an organisational level). Alternative problem-solving approaches have been used in these various contexts for many years. Herbert (1981) focused upon problem solving within individual assessment, Gutkin and Curtis (1982) offered a problem-solving model for school-based consultation, while Schmuck, Runkiel, Saturen, Martell and Brooklyn Dew (1972) outlined a seven stage problem-solving cycle for addressing organisational problems within schools.
2.3.1. The progression-by-steps approach to problem-solving

"Thinking begins in what may fairly enough be called forked-road situation, a situation which is ambiguous, which presents a dilemma, which proposes alternatives. As long as our activity glides smoothly along from one thing to another, or as long as we permit our imagination to entertain fancies at pleasure, there is no call for reflection. Difficulty or obstruction in the way of reaching a belief bring us, however, to a pause. In the suspense of uncertainty, we metaphorically climb a tree; we try to find some standpoint from which we may survey additional facts and, getting a more commanding view of the situation, may decide how the facts stand related to one another" (Dewey, 1933, p.11)

Within the context of educational psychology training successful problem solving has been characterised by a progression through a set of clearly defined steps. Figure 2.1 summarises some of the more commonly referred to problem-solving frameworks. All of these frameworks, and most of the published ones, can be seen to have built upon the five phases of reflective thinking first described by Dewey (1933, cited in Archambault, 1964):

1. the identification of the problem,

2. the clarification of the problem,

3. the use of hypotheses,

4. reasoning about the possible results of acting on one or another hypothesis and choosing one, and,

5. testing the hypothesis by overt or imaginative action" (p.xvi).
Dewey's description of reflective thought was developed from his observations of how ordinary people went about processing information when confronted with a complex real-life problem. In Dewey's terms, when a person is faced with a problem that is meaningful to them they progress through a sequence of steps before a solution is tried out. Dewey's model is based upon applying classical scientific method to real-life experience, so that "transformation of scientific findings into rules of action" can result (Dewey, 1929, p.19). The progression-through-steps theory of problem solving has proved to be far more prescriptive than it has been descriptive. Dewey himself acknowledged that the progression was not fixed or linear in real life, with some steps being passed through quickly, while other needed more time and/or a number of reruns. When things went wrong with the process Dewey suggested that it was helpful to go back and review the problem-solving steps so far undertaken to see where an error of logic or judgement may have occurred.

Subsequent writers have developed, often without direct reference to Dewey's work, the prescriptive use of variants of his framework. Such writers argue that an educational psychologist's problem-solving competency is greatly enhanced if the steps are made explicit and presented in a linear manner and adhered to conscientiously (Cameron & Stratford, 1987; de Mesquita, 1992; D'Zurilla & Goldfield, 1971; Gutkin & Curtis, 1982; Monsen et al, 1998). Dewey himself makes the point that the advantage of applying the scientific method to real-life problems is that it provides a means of "control, public test, and the possibility of proof and reasonable consensus" (Archambault, 1964, p.xv).

2.3.2. Possible limitations of contemporary problem-solving approaches
Two main limitations will be presented within this section, those relating to context-constraints and those relating to the user-constraints. In discussing context-constraints, we will consider whether one problem-solving approach is sufficient to deal with the range of problems and contexts presented to educational psychologists. As far as user-constraints are concerned, the extent to which an educational psychologist's skills, experience and theoretical orientation may interact with the problem-solving process will be discussed.
2.3.2.1. Context-constraints

The issue of context has received attention by a number of writers, both within and outside the field of educational psychology. Schön (1983), for example, has critiqued the "technical rationality" view of applied practice. This "consists in instrumental problem solving made rigorous by the application of scientific theory and technique" (ibid, p.21). While acknowledging the existence of some "high, hard ground where practitioners can make effective use of research-based theory and technique" (ibid, p.42), he argues that practitioners are more likely to find themselves in a swamp where many of the problems of greatest human concern exist as confusing real-life messes, "incapable of technical solution," (ibid, p.42). Schön (1983) maintains that real-world problem solving should be seen as a "craft" or, as Wright (1998) refers to it, as "professional artistry", not open to analysis but involving structured reflection both during and after the actual process of doing. Here the influence of Deweyian thinking is most evident.

Checkland and Scholes (1990) argue that problem solving can be analysed and translated into a methodology which includes an element of structured reflection. While they call into question the usefulness and relevance of scientific problem solving to the "soft" social science problems, they nevertheless support the use of approaches which "introduce some of the kind of rigour normal in natural science into this more difficult field of applied social science" (ibid, p.290).

In discussing the uses of both Soft Systems Methodology (SSM) and of Cameron and Stratford's (1987) problem-centred approach, Frederickson (1990) argued that in educational psychologist practice straightforward human problems are rare (i.e. well-structured problems about which there is general consensus and an obvious solution). While it may be possible to identify a well-defined area of concern and apply a problem-solving approach, most situations encountered by educational psychologists seem much closer to the SSM description of "real-life messes".

Ill-defined problems can be interpreted in different ways by different people. From their experience in training educational psychologists, in England, Miller et al (1992) reported a growing realisation about the inherent limitations of many problem-solving models, "for dealing with the complex interpersonal perceptions, motives and behaviour that are encountered" in real-life work contexts (p.31). They argued that
attention must be given to the more interpersonal and systemic aspects of problem solving within applied contexts, very much as Argyris (1982) had suggested earlier.

2.3.2.2. User-constraints

In comparison to context-constraints, issues concerning user-constraints have been given little attention within the literature. The assumption appears to be that training psychologists in problem-solving approaches should proceed by teaching a set of well-researched principles (not actionable skills), selected to maximise the probability of high quality solutions being generated. Indeed D'Zurilla and Goldfried (1971) drew attention to the fact that there was a remarkable degree of agreement as to the general kinds of operations involved in effective problem solving, although the precise terminology and the steps involved vary greatly between writers. These observations are hardly surprising given that the vast majority of contemporary problem-solving frameworks can be traced back, conceptually at least, to the pioneering work of Dewey.

Even if those being trained attempted to faithfully apply the problem-solving approach(es) they are taught, it is likely that differences will be apparent between what Argyris and Schon (1974, 1996) refer to as their "espoused theories" (what people say they are doing) and what they actually do, (or the "theories-in-use") apparent from their practice. It was hypothesised that the primary focus of much training would be at this espoused level. As a consequence many EPITs (and similar trainees) are probably being educated in ways which fail to assist them in identifying the incongruities between their espoused theories and theories-in-use.

De Mesquita (1992) observed that practising school psychologists do not always adhere to the systematic assessment approaches which they claim to be applying. In his study, experienced practitioners did not differ significantly from trainee school psychologists in their problem solutions or strategies. The only difference found was in the relative "efficiency" of the experienced practitioners who spent less time on information processing and problem solving.

Lichtenberg (1997) undertook a review of expertise within counselling psychology. He focused upon clinical decision making as an area to investigate differences between experts and novices. Overall he found that the counselling process
was seen as effective. However, in terms of the accuracy of their clinical judgements, the amount of training and experience did not appear to be significantly related to differences between novices and experienced counsellors. The characteristics of expert and novice problem solvers will be outlined in more detail in a later section. The research reviewed in this upcoming section would tend to imply that attempting to measure interviewer behaviours which correspond to steps in a given problem-solving process would not be likely to help in discovering what behaviours actually lead to successful problem understanding during an initial teacher interview.

Miller et al (1992) argued that "problem solving is not a mechanical operation, and the potential problem solver brings to the situation, and must be aware of, his or her own personal assumptions, values and prejudices" (p.37). When the problem solvers are educational psychologists they will also bring to the situation different psychological theory and research. Reynolds et al (1984) describe a vision of school psychologists as problem solvers whose actions originate from sound psychological theories and research, and recommends problem solving as a process by which different theories and content can be accommodated.

The practice of problem solving cannot be content or value free. In carrying out a step such as "collect data relevant to the problem" (Cameron & Stratford, 1987), the theoretical bases which inform the educational psychologist's work are likely to influence the type of information he or she will collect. The use of behavioural frameworks would lead to the collection of information on antecedents and consequences, while cognitive approaches would place more emphasis upon the sense the teacher (and child) was making of the child's challenging behaviour, whilst those employing a situative approach would try to combine aspects of both behavioural and cognitive orientations (Greeno, Collins & Resnick, 1996).

Theoretical considerations will also influence whether one problem is identified as being the priority (and if so which one), the relative weight given to collecting data on the presenting problem itself (as opposed to factors which may be influencing its occurrence), the type and range of alternative interventions considered, the information regarded as relevant in selecting between possible interventions and, in later stages, in evaluating their effectiveness.
Frederickson et al (1991), have argued that educational psychologists have paid insufficient attention to the theoretical bases which have informed their problem-solving practice. This may be due to an implicit over-reliance upon behaviourally-based approaches to problem solving (Sigston et al, 1996). Frederickson et al (1991) emphasise the need to focus upon the "why" questions in the formulation of hypotheses about the problems being experienced. Monsen et al (1998) build upon this position by stressing the need for such hypotheses to be made explicit, arguing that they would be more open to challenge, and feedback within Argyris' use of the word. Frederickson et al (1991) also put forward the view that the unique contribution of educational psychologists lies in the broad range of hypotheses they are able to draw upon in understanding a client's problem. Unfortunately the authors do not address the central question of how such an approach helps the practitioner and client gain an accurate understanding of the problem.

Frederickson et al (1991) also expressed concern that educational psychologists tended to consider too narrow a range of possible hypotheses. Support for this concern was found in a study which looked at the use of problem solving within a group of American school psychologists (de Mesquita, 1992). De Mesquita reported that most psychologists used a solution by elimination ("rule out") strategy. This involves testing out a small number and range of hypotheses which are perceived to be most probable and eliminating any when disconfirming evidence is found.

Accountable practice would require more than this. It would require that educational psychologists make explicit their thinking and reasoning about a client's problem, the evidence base and their rationale for the decisions made and actions taken. Using an explicit framework to guide problem solving confers important advantages on both the practitioner and client. Such an approach could assist everyone concerned to see the appropriateness of fit between the process and outcome of problem management. It also provides a medium for inducting new educational psychologists into the complex activities demanded of them in everyday work and enables experienced practitioners to share and develop good practice.
2.3.3. Conclusions
The discussion so far, indicates that there is little research evidence that experienced practitioners follow the problem-solving steps they were taught when trained. To the extent that they do conform, their behaviour is characterised by the flexibility and adaptation suggested by Dewey. Several writers acknowledge that a progression-by-steps approach to problem solving is helpful for the purposes of training and study rather than as a description of a naturally occurring process (D'Zurilla & Goldfield, 1971; de Mesquita, 1992). For the purposes of this thesis any research attempting to measure interviewer behaviours which correspond with the various steps in a given problem-solving sequence is unlikely to be helpful. This thesis will focus instead upon the task of identifying what interviewer behaviours are associated with the formulation of a "high quality" understanding of a teacher's problem.

The problem-solving frameworks referred to in this chapter provide little guidance as to the skills involved in this critical task of understanding the teacher's presenting problem. It is assumed in all of the progression-by-steps frameworks that the educational psychologist has the component problem-solving skills. However, there is no evidence that this is in fact correct, especially when the skills have not been made explicit within the various frameworks.

2.4. INFORMATION-PROCESSING THEORY AND THE PROBLEM UNDERSTANDING TASK
Another approach to understanding problem solving is that provided by information-processing theory. This approach is concerned with the identification of the component skills involved in effective problem solving rather than in describing the progression-by-steps which might underlie such a process (Dawson, 1998).

Information-processing theory tries to explain the fact that people can and do solve a variety of problems despite the constraints placed upon them by the limitations of the human information-processing system (Ranyard, Crozier & Svenson, 1997; Wenger & Carlson, 1995; Rose, 1999). For example, a given problem may be so complex that, if all the information needed to reach a solution were obtained, the time
Figure 2.2 The problem space of legal moves in the Tower of Hanoi problem

Note: If boxes touch each other, or are joined by arrows, this indicates that one can move from one state to the other using a legal operator

Adapted from: Eysenck and Kean (1995, p.395)
needed would far exceed that available. Even if there were the time available the human
brain has a limited capacity for processing information at any one time. While long-term
memory provides a considerable storage capacity, working memory is far more limited.
Working memory is defined as the "conscious ability to process information on-line
while performing cognitive tasks" (Rose, 1999, p.44). It is working memory where
problem solving takes place, and current thinking indicates that, at best, it can process
between five to nine separate new pieces of information at any one time (Anderson,

A further constraint to successful problem solving is the amount of domain
specific knowledge which is available to the problem solver. Such knowledge (and
experience) is needed by problem solvers to deal with the types of situations with which
they are presented. This area is often omitted or given much less emphasis in discussions
on problem solving. The assumption appears to be that process skills are more important
than content knowledge (i.e. you do not need to know much about a given area as long
as you are good at organising interpersonal processes). Clearly content knowledge is as
essential to effective problem solving as are interpersonal and cognitive strategies
(Schraagen, 1993).

Inadequate performance could also be attributed to a mismatch between the
client's representation of his or her problem, and the problem solvers' own construction
(Ranyard et al, 1997). The skills involved in solving real-life problems are very
dependent upon the problem solver's ability to use cognitive strategies, which help make
connections between the large amounts of information available to them, and the limited
capacity of their working memory. Information-processing theory would suggest that the
problem solver must proceed by processing a limited amount of this information, at any
one time, and operating on it in a serial manner.

2.4.1. Newell and Simon's problem-space theory
Newell and Simon's research into human problem solving, especially their seminal work,
"Human problem solving" (1972), still remains a much quoted reference in contemporary
information-processing theory and research (Dawson, 1998). Despite the age of this
theory, it was found with a few modifications to be a useful way of structuring thinking
in the area of interviewer reasoning. The current debate between the classical and the connectionist views of information processing is beyond the scope of this thesis, however readers are referred to Dawson (1998) who provides an excellent coverage of the issues involved.

Newell and Simon (1972) conducted a wide range of experiments under controlled laboratory conditions into how people (usually undergraduates), approached a range of three-dimensional puzzles, and in particular the Tower of Hanoi problem. In the Tower of Hanoi problem participants were presented with three vertical pegs in a row, the first of which had three disks piled on it in order of size; that is the largest disk was at the bottom, the next on top, and so on. The goal of the problem was to have all the disks piled in the same order on the last peg. However, disks could only be moved in certain ways. Only one disk could be moved at a time, and a larger disk could not be placed on top of a smaller disk (Eysenck & Keane, 1995, p.363).

Figure 2.2 presents the problem space of legal moves for the Tower of Hanoi problem which will be referred to in the discussions below. From Newell and Simon's perspective people went about solving problems by first exploring a range of possible ways (paths) of finding a solution. Puzzles, such as the Tower of Hanoi, begin with a point outside the problem space (or maze), and then progress through a series of moves to the centre - the solution. To achieve the goal of getting to the centre, the person comes across many junctions where they have to make decisions (e.g., go straight, turn left, and so on). Each of these alternative paths may branch again and again, with some leading to the centre and the solution, and some not. Different strategies can be employed to find one's way inside the problem space (e.g., mark where you have come from, initially take left turns, and so on). These strategies provide the person with a systematic way of searching the problem space, and selecting one path from a range of alternative paths to get closer to the solution.

Their findings suggested that the structure of a problem could be characterised by a set of states, beginning with an initial problem state (e.g., standing outside the problem space), involving many intermediate states (e.g., moving through the problem space), and ending with a goal state (e.g., being at the centre of the problem space). People in their studies began with an initial state and "searched" through a space of alternative mental
states until they reached a goal state. Each of these alternative states can also have alternatives. The number of these alternatives increases greatly as one moves away from the initial state to the goal state.

In order for people to solve the Tower of Hanoi problem they have to employ a range of cognitive strategies to reduce the number of states which they have to pass through to reach the goal state. Newell and Simon describe such strategies as heuristics. A heuristic strategy is in essence a nonrigorous way of achieving a solution to a problem. While heuristic procedures often lead to solutions, they offer no guarantee of doing so (Bruner, 1996). Heuristics are contrasted with algorithms, which are methods that produce a definite solution. For example, in the Tower of Hanoi problem, a person could check every state, by starting at the beginning and systematically checking every alternative state until the goal state were achieved. This procedure would take far too long to be efficient, but is guaranteed to solve the problem. Heuristics, on the other hand are "rules of thumb", that may not guarantee a solution to a given problem every time, but most of the time, thus saving time and effort.

One of the most important heuristic principles proposed by Newell and Simon was means-ends analysis. It consists of three main steps: first, the person notes the difference between the initial state and the goal state, second, they create subgoals to reduce this observed difference, and third, they select an operator that will solve this subgoal. Moves from one state to another are achieved by the application of "mental operators". As problems may have a large number of alternative paths, people use strategies to move from the initial state to the goal state efficiently. Thus, people's conception of a problem (i.e. the nature of the initial state), and the knowledge they bring to it (the operators and strategies available to them), make contributions to their problem-solving behaviour (Newell & Simon, 1972).

Newell and Simon's problem-space theory identifies the various hypothetical states, processes and strategies that people may use to go about solving problems, at least puzzle based problems. The theory also predicts the types of constraints that will make solving problems difficult, for example, the constraint of human working memory and the interaction between this and the types of strategies people use to search it. From a theoretical perspective it provides a normative theory of human problem solving. The
theory allows for the structure of the problem to be specified and the best solution to the problem to be defined. In puzzle-based research from the 1950s to the present day, it is possible to elaborate the problem space and identify the correct or best solution to the problem by tracing the shortest sequence of moves from the initial state to the goal state. It provides a normative model of what an "expert" problem solver would do, and how and why people's behaviour diverges from that of the "expert".

2.4.2. Summary of Newell and Simon's problem-space theory

Newell and Simon's (1972) information-processing theory of problem solving suggests that when people move from an initial problem state towards a solution state they form a mental representation of the problem, which in this thesis is called a problem map. Research on expert problem solvers (outlined in section 2.7 of this chapter) shows that they acquire through experience mechanisms for internally representing the problem space. This internal model acts as a precondition for planning, reasoning, anticipating and controlling subsequent cognitive behaviour (Ericsson & Lehmann, 1996).

The problem map undergoes a series of transformations as the problem solver tries to move from the initial problem state to a solution state. These transitions are achieved by the problem solver employing a series of cognitive operations, or strategies, such as means-ends analysis (this is the strategy whereby the problem solver evaluates the difference between the initial problem and the solution state). In summary, Newell and Simon's theory suggests that:

1. Problems have a large number of alternative paths from the initial problem state to the solution state.

2. The total number of such states, as generated by mental operators, is called the 'basic problem' space.

3. People's problem-solving behaviour is seen as the production of knowledge states by using mental operators to move from the initial knowledge state to a goal knowledge state.
4. People use their knowledge and various heuristic methods (i.e. means-ends analysis) to search through the problem space to find an efficient path from the initial state to the goal state.

5. All of these processes occur within the limitations of the individual's cognitive system, that is their working memory and information processing limitations (i.e. sorting and retrieving information from long-term memory).

6. The contents of people's short-term memory are open to conscious reporting by the individual. This assumption guided much of their work in which they used think-aloud protocols. This is a method whereby individuals say out loud what is going through their minds as they solve problems. The researcher records responses which are analysed later (Eysenck & Keane, 1995, p.363).

2.4.3. Cautions with information-processing (problem-space) theory
While information-processing theory, and in particular problem-space theory, does aid our understanding of some aspects of the problem-understanding task, six cautions about the framework's explanatory usefulness and methodology arise:

1. There is a concern about the ecological validity and generalisability of the results of puzzle-based problems. The theory was developed on the basis of laboratory research undertaken with people (mostly undergraduates) solving highly structured problems like the Tower of Hanoi, maths, chess or logical reasoning tasks. These highly structured activities contrast greatly with the ill-defined problems characteristic of most of those presented to educational psychologists. Ill-defined problems require substantial amounts of domain specific knowledge. This is needed to define what is and is not part of the initial problem state, to develop and experiment with a range of operators, and to define what the goal state may be.

2. The puzzle problems used in Newell and Simon's research were usually unfamiliar to the participants, who had very little prior knowledge about such problems. In
contrast many of the problems encountered by educational psychologists require considerable amounts of prior specialist knowledge in order to work effectively with them (Schraagen, 1993).

3. The knowledge required to solve puzzle problems is usually present in the statement of the problem itself. In real-life ill-defined problem situations much of the information required to solve the problem is not initially present. Much of the difficulty faced by an educational psychologist during an initial teacher interview is trying to sort out what information derived from the teacher, the environment and from their own memory is relevant to solving the problem.

4. The requirements of puzzle problems are usually straightforward, the start state and the goal state are clearly specified. In applied problems much time is spent attempting to specify what the goal state is actually going to be.

5. The theory focuses upon the strategies used in solving problems in the later parts of the problem-solving process, whereas the focus in this thesis is on how EPITs reach problem understanding in the earlier phases of the process.

6. The use of talk aloud protocols to collect data on human problem solving, though strongly advocated by many writers (Payne, 1994; Westenberg & Koele, 1994), does have a number of problems. Such a procedure seems to highlight all of the concerns evident in the use of introspection as a data collection method in the late 1890s. Individuals are often not consciously aware "how they reasoned, having at best glimpses of the process. They are aware of the results, not the mechanism" (Johnson-Laird & Shafir, 1993, p.2). It is also a particularly reactive technique, with the instruction to verbalise changing the very processes which are under investigation (Ranyard et al, 1997). For the purposes of this thesis these concerns argued against the use of talk aloud protocols as a means of collecting data on EPITs' problem reasoning. Instead the use of a "real-life" naturalistic simulation task (i.e. educational psychologist-teacher initial interview), in which actual verbal
behaviour could be observed, and its subsequent relationship to quality of understanding assessed, was used.

2.4.4. Conclusions
Problem-space theory provides a useful account of the problem-solving processes involved when people go about solving well-defined problems. With more ill-defined real-life problems the theory has to be extended. The value of the theory is that it highlights that two processes are involved - an understanding process that generates a problem map from the initial problem state, and a solving process that searches this problem map to reach the goal state. It also recognises the central role that understanding plays, as Simon (1978) suggests: "The relative ease of solving a problem will depend on how successful the solver has been in representing critical features of the tasks in his problem space" (p.276). The research upon which the theory has been developed has focused upon the solving rather than the understanding aspects. As a result there is a lack of primary data to explain how a problem solver reaches an understanding of the problem. Solving problems with inanimate objects may lead to different types of causal reasoning than problem solving with animate objects, such as people presenting the interviewer with complex and ill-structured problems.

2.5. THE CHARACTERISTICS OF THE PROBLEMS WITH WHICH EDUCATIONAL PSYCHOLOGISTS WORK
The previous section raised a number of concerns about information-processing theory; however it still provides some useful concepts which can assist in clarifying the kinds of problems with which educational psychologists work. Many educational psychologists begin work on a formal request or referral by interviewing the teacher. In the simulation tasks used in study two (see chapter four) the task for the participants, acting as if they were qualified "educational psychologists", is to undertake an initial interview with a female teacher who is experiencing difficulties with a boy in her class.

The educational psychologist within this task starts with an incomplete and possibly inaccurate statement from the teacher about the concerns she is experiencing
with the boy. What actually is the teacher's problem? Is she unable to manage the boy's behaviour because the behaviour is so extreme that no reasonable person would expect her to cope with it? Does the boy have some unrecognised physical or emotional problem that is not being dealt with? Are there family-based issues contributing to the boy's behaviour? Is the boy's behaviour actually that extreme and problematic? Does the teacher have an unrecognised physical or emotional problem that she is not dealing with? Or are the teacher's behaviour management skills inadequate for the problems that are presented to her? Or are the teacher's curriculum and general management and organisation skills inadequate? Or are the resources, both material and in terms of staffing support, lacking or insufficient to address the concerns? Or is it a complex interrelationship of these and other as yet unknown factors, and if so which ones?

To begin with the educational psychologist is not in a position to address these and other questions, as he or she does not have enough information available to legitimately do so. The initial interview with the teacher is an opportunity to obtain information about the teacher's perceptions of her presenting problem situation. But what information should the educational psychologist collect during his or her initial interview with the teacher? The criteria as to what counts as relevant information is not clear. Both the purpose of the educational psychologist's involvement and the goal state of problem solving with the teacher may not be known, or may at best be unclear and abstract (Halliday, 1985). The teacher in the previous example may have a goal of getting the child removed from her class, but this may not be the priority problem if competency issues are likely to lead to her facing increasing pressure from the other children in her class, parents, colleagues and the headteacher.

2.5.1. Ill-structured applied problems

Most of the problem situations which require the involvement of an educational psychologist can be seen to be ill-structured in nature. Ill-structured problems are "more complex, have fewer definite criteria for deciding if a solution has been reached, and lack complete information and a convenient list of accepted procedures. They have higher verbal content and are more context dependent" (Frederiksen, 1984, cited in Nagy 1994, p.164).
Information-processing theory would suggest that problem solvers develop a series of moves to make connections between the initial problem state and the goal state. These moves would be evaluated regularly to check that they were in fact leading to changes in the desired direction. This process can be seen to be goal directed rather than being a random process. In the example of the teacher interview outlined earlier, this process would require the interviewer to test out that what he or she was doing was actually helping to achieve a goal. The solution state would not just appear as a result of discussion but would be achieved by a series of planned operations which were regularly checked against the interviewer's problem map and corresponding teacher data.

Information-processing theory highlights some useful ways of working with the types of ill-structured problems with which educational psychologists work. Part of the task for the educational psychologist is to reduce the complexity of the problem situation by actively processing and sorting case details into some form of problem map. This means that, if an educational psychologist is to understand a teacher's problem, it will not be helpful to begin by finding out everything about the problem. Given the constraints of human working memory the interviewer must find strategies which make it possible to work with teacher information sequentially and purposefully rather than all at once in a haphazard manner (Glaser, 1984; Greeno et al, 1996; Robinson & Halliday, 1987, 1988; Rose, 1999).

Given that the problems presented to educational psychologists are not clearly defined, when they start the interview they cannot be sure what information is relevant and what is not. The educational psychologist does not know whether information about the teacher's physical or emotional state, relationships with other colleagues or competency with behaviour management or curriculum planning have anything to do with the problem. The dilemma is that it would be inefficient for the educational psychologist to collect information on every aspect of the problem just in case it were relevant. Equally it would be inefficient to pursue idiosyncratic lines of enquiry. At the same time they need to obtain sufficient information to ensure that less obvious aspects of the problem are identified. Whatever the strategy used it must be efficient in enabling the interviewer to determine what is relevant during the actual process of collecting data and defining the problem with the teacher (Halliday, 1985).
2.5.2. Summary

The overall strategy for working effectively with ill-structured problems appears to involve the interviewer (problem solver) transforming the initial problem into a series of better structured subproblems, which would have goals which can be specified and evaluated. The lack of clarity and definition of purpose which made the problem ill-structured in the first place does not go away. However, at any one point in time the interviewer and the teacher will be working jointly on a relatively well-structured subproblem which is part of the larger problem space.

For the purposes of this thesis an educational psychologist who wants to understand a teacher's problem situation needs to develop an internal construction of it - a problem map. Such a map would need to identify the key aspects of the problem, and their interrelationships, in a way that is both accurate, complete and helpful to the process of facilitating change (Ericsson & Lehmann, 1996; Glaser, 1984; Robinson, 1987). This cannot be achieved by using means-ends analysis since the goal in such problems is not defined. The hypothesis-testing framework as a deliberate cognitive strategy may overcome this difficulty.

2.6. THE HYPOTHESIS-TESTING FRAMEWORK TO GUIDE PROBLEM UNDERSTANDING

"Even a small number of observations may suggest an explanation – a hypothesis or theory" (Dewey, 1933, p.151).

When an educational psychologist first begins work with a teacher in exploring the problem situation there is often very little information available to them. Yet despite this lack of detailed information the educational psychologist is able to generate a range of initial and tentative guiding hypotheses. These hypotheses assist the educational psychologist in transforming the initial problem state into a series of better structured subproblems. An hypothesis provides the interviewer with a set of conceptual boundaries
into which he or she can locate, sort and compare case details given to them by the teacher. If a given hypothesis is accurate then certain case facts and further questions will follow. Each hypothesis guides the collection of information which is then used to either support or disconfirm its accuracy (Halliday, 1985; Morton & Frith, 1995).

Hypotheses are developed by the educational psychologist from stores of knowledge and experience held in long-term memory which are referred to in this thesis as content-guides (as this is the terminology used within the problem analysis framework), but are more commonly called schemata (Anderson, Spiro & Anderson, 1978; Wilden & La Gro, 1998). A schemata is a metaphor for an internal "organising framework of knowledge about a specific domain which both influences the use of information and also filters out irrelevancies that structure the 'sense making' cognitions of the person" (Wilden & La Gro, 1998, p.177). Schemata provide a means by which incoming information can be organised, matched and checked. Schemata evolve with experience, becoming more elaborate, organised and easily accessed. Such content-guides consist of the body of knowledge in psychology (and other domain specific information), available to the interviewer, experience with similar or related problems, and other knowledge. The content-guides assist the interviewer to construct questions and to see relationships, patterns and connections between what initially may seem to be unrelated chunks of information (Glaser, 1984).

Hypothesis-testing as a cognitive strategy provides a means for the interviewer to transform the initial problem state into a series of structured propositions leading towards a solution state. It also provides the interviewer with a conceptual framework within which to integrate and manage the potentially large amount of information provided by the teacher. Elstein et al (1990) provide some support for this view that sequential hypothesis testing accounts for the way that medical practitioners reach a diagnose of a patient's problem. In a study of medical consultations, doctors generated initial hypotheses, collected data to test these hypotheses out, and then moved onto another hypothesis and began the process over again. Interestingly, the choice of hypotheses appeared to be a selective process with all the doctors choosing only about a third of the potential hypotheses available to them, as identified by a panel of "experts".

In our example of the teacher with the challenging child in her class, the
educational psychologist may start the interview with two initial guiding hypotheses: "The difficulties that the teacher is experiencing with managing the boy's behaviour may be due to the fact that the boy's behaviour is extreme and disturbed" and "The teacher, who is in her second year of teaching, may not be very skilful in managing the boy's behaviour". Such hypotheses immediately reduce the initial problem state to a search for data around the behaviour of the boy and the teacher's responses to it. As in Elstein et al's (ibid) study the hypotheses generated will guide what questions are asked and the information obtained will be matched to each hypothesis to test its relevance.

Within the complex knowledge domain of medicine, a diagnosis is reached by eliminating competing hypotheses and choosing one that best fits the symptoms currently presented. The kinds of problems with which educational psychologists work often involve complementary rather than competing hypotheses. Personal and job-related problems are often connected, with difficulties in one area influencing other aspects of functioning. A doctor is looking for one or two solutions to a problem, whereas the educational psychologist is trying to identify a range of different aspects of the problems, and is trying to see how these separate dimensions might be linked. Such a task poses great demands on the interviewer's working memory.

The medical context also benefits from having a large and robust body of facts which highlights the relationship between particular symptoms and diagnoses. Hypothesis testing involves the doctor in matching hypotheses against presenting symptoms. The doctor can, with some degree of confidence, group specific data under diagnostic labels (e.g., "absence of white patches on the red blotches on the tongue means not candida albicans but more likely either geographical tongue or an allergic reaction").

Educational psychologists on the other hand must retain the information given to them by the teacher in order to construct an integrating hypothesis which is unique to that specific teacher's problem situation.

The discussion so far has not provided answers to the central question of what behaviours differentiate expert from novice problem solvers. Previous sections have highlighted that novice problem solvers do not appear to lack problem-solving frameworks, and that the use of these does not necessarily guarantee success (Elstein et al, 1990; Lichtenberg, 1997). What then are the factors which could account for these
differences? The next section reviews research on expert and novice problem solvers and concludes by offering some answers to this question.

2.7. THE CHARACTERISTICS OF EXPERT AND NOVICE PROBLEM SOLVERS

"To be a good judge is to have a sense of the relative indicative or signifying values of the various features of the perplexing situation; to know what to let go as of no account; what to eliminate as irrelevant; what to retain as conducive to outcome; what to emphasize as a glue to the difficulty" (Dewey, 1933, p.104).

"The data at hand can not supply the solution; they can only suggest it. What, then, are the sources of the suggestion? Clearly past experience and prior knowledge" (Dewey, 1933, p.12).

In reviewing the literature for this section it was apparent that there is an "absence of a commonly accepted operational definition of 'expertise'" (Lichtenberg, 1997, p.222). Ericsson and Lehmann (1996) offer a definition which is based on a balance between training and experience on the one hand and innate individual differences in people's capacities and talents on the other. Frensch and Sternberg (1989, cited in Lichtenberg, 1997) view expertise as the ability to perform "qualitatively well in a particular task domain" (p.189).

For the purposes of this thesis Frensch and Sternberg's definition is helpful in three important ways. Firstly, it views expertise as being linked with practice and experience. Secondly, the quality of performance is seen as a defining characteristic. Although speed and quality have been found to be related (Chi, Glaser & Farr, 1988), quality, rather than speed, would seem to be a more relevant critical feature for expertness. Experts are seen as being "expert" because of the quality of their reasoning.
This reasoning is qualitatively superior to that of non-experts. Finally, experts usually excel in their own specific domain area. There is little evidence that a person expert in one area can successfully transfer his or her skills to another domain (Ericsson & Charness, 1994; Ericsson & Lehmann, 1996; Lichtenberg, 1997; Wiley, 1998).

Research consistently demonstrates that it is the quality of a problem solver's domain-specific knowledge and experience (content-guides) held in long-term memory and their ability to retrieve and utilise it to solve problems which differentiates experts from novices (Schraagen, 1993; Wiley, 1998). These content-guides serve as reservoirs for hypotheses (and other domain-specific knowledge and experience) which can be called upon during the hypothesis-testing process (Glaser, 1984).

Elstein et al (1990) noted in their review of medical research that both experienced and inexperienced diagnosticians employed a systematic process of generating and testing diagnostic hypotheses. However, experienced diagnosticians did not actually generate significantly more hypotheses, nor did they hold more of them in their working memory, nor were they any more thorough in their data collection than inexperienced diagnosticians. What experienced diagnosticians did do was to make more accurate interpretations of the patient's data to test their hypotheses, suggesting that they had more domain-specific knowledge than their less experienced counterparts.

The finding that applying an hypothesis-testing strategy did not on its own distinguish expert from novice problem solving has been observed in a wide range of areas (Ericsson & Lehmann, 1996). What differentiates expert from novice problem solvers is the way that they organise and structure their knowledge. Yet expertness also appears to be relatively domain specific. Elstein et al (1990) found that problem solving competence "varied greatly across cases and was highly dependent on the clinician's mastery of the particular domain" (p.13). Voss et al (1983) showed in their research that expert reasoning was specific to a given domain. Their subjects, who were all experts from the fields of chemistry and social sciences, were given a range of political science problems to solve. Their results showed that the subjects lacked the domain-specific knowledge and strategies to successfully analyse and solve the political science problems.

In addition to the crucial place of domain-specific knowledge, research has also highlighted the role that experience and practice play in the development of expertise and
competence - though research by Ericsson and his colleagues (1994; 1996) suggests that
the type of experience and practice is very important. They identified the so-called ten-
year rule for the development of competence in a wide range of domains (e.g., playing
tennis, chess, a musical instrument, solving physics problems). They argued that it took
about ten years of "deliberate practice" before a person reached expert status within a
given area. Deliberate practice is similar in intent to Argyris' term of actionable
knowledge. Ericsson and Lehmann (1996) propose that at least four hours a day of
structured tutored practice is needed to develop expert competence. Knowledge is "first
acquired then organised into appropriate actions that, with further practice" (p.276), can
be accessed automatically via problem-based retrieval.

In terms of training educational psychologists, content-guides can be taught
through lectures, texts and workshops. Unfortunately, learning about reading or
behaviour difficulties, even if supported with illustrated case examples, is very different
from being able to recognise such issues when faced with an ill-structured problem that
may or may not involve reading or behaviour. By suggesting that a particular example
illustrates a specific type of problem, the tutor, and not the EPIT, has transformed the ill-
structured task into a well-organised problem. The challenge for tutors is to teach EPITs
how to undertake these transformations. The literature on learning and skills acquisition
would indicate that such learning would involve intensive and sustained tutoring in
solving a range of real problems which require EPITs to discriminate which knowledge
is relevant and how to progressively test its appropriateness to a given case (Halpem,
1998). Training courses may well see placement experiences providing such a rigorous
apprenticeship, however there is limited evidence to confirm this.

Arkes (1981) research indicates that people are selective in the types of evidence
they seek to confirm or disconfirm their hypotheses. People appear inclined to seek
support for their first or favourite hypotheses and are then very reluctant to critique its
validity. Research from the field of social psychology also cautions that people can
process information by giving it undue positive or negative connotation. The problem
is that people are often unaware of these biases and their effect on the quality of their
information processing (Ormrod, 1998).

Ericsson and Lehmann's (1996) review of the research showed that, in complex
knowledge domains, expert performance is characterised by the problem solver reasoning extensively with alternative and often competing hypotheses. If educational psychologists could learn to maintain competing hypotheses and deal with the resulting uncertainty, they may be in a better position to avoid such biases. Elstein et al's (1990) research with doctors stressed that one of the major factors associated with an appropriate diagnosis was the accuracy with which doctors interpreted patient data.

Glaser (1984) showed that there were qualitative differences between experts' and novices' content-guides. He found that experts tended to have more relevant and detailed information which was easily accessed. Novices on the other hand tended to organise their knowledge around the surface features of the presenting problem rather than looking for patterns or relationships. Chi et al's (1981) research on physics experts showed that in addition to experts having larger and better organised content-guides, they also used theory and principles to guide and represent problems. Novices were once again found to stick very much to the most obvious surface features of the problem.

Expert problem solvers can be distinguished from novices by their use of theory and principles to integrate apparently unrelated chunks of the problem situation, to infer additional information from that available, and to make predictions (Chi et al, 1981; Glaser, 1984). Within the counselling literature Claiborn (1982) outlined the differing impact upon clients of counsellors who were tied to the surface features of the client's data and those who were able to transform the client's information by making interpretations and disclosing them back to the client. Experts appear to actively sort and reason with the information presented to them, while novices seem to remain tied to the minutiae of case detail.

To return to the example of the educational psychologist meeting the teacher who is experiencing difficulties dealing with a young boy in her class. Novice problem solvers would probably find such a task challenging and may feel overwhelmed, at least at the outset. To reduce this doubt and uncertainty they would attempt to try to find out all the facts of the case they could (e.g., what is it that the boy is doing which leads the teacher to experience difficulties?). An expert on the other hand would soon move to investigating more abstract links (e.g., this may be because she is not particularly skilful with classroom management and/or curriculum differentiation and so on).
As mentioned in previous sections the types of problems with which educational psychologists work are likely to be of the ill-structured type. An expert problem solver would be able to draw upon hypotheses not directly suggested by the data (e.g., perhaps work-related problems may be associated with issues of stress and depression as a result of frustration regarding competence and esteem needs). Discovering the interrelationships between the various aspects of the problem situation is crucial as it provides the basis for deciding what to do next. An expert problem solver does not omit aspects which may limit the ultimate effectiveness of any intervention. These aspects may include the competence of both parties and their working relationship (e.g., if the teacher has a low commitment to changing, then proceeding as if this were not so and blaming the teacher will probably result in failure).

2.7.1. Summary of the main differences between experts and novices
Expert problem solvers are "not just 'better' at domain-specific tasks than novices; they do the tasks differently" (Lichtenberg, 1997, p.223). For the purpose of the questions posed within this thesis experts differ from novices in the following ways:

1. They spend longer amounts of time exploring alternative and competing hypotheses before reaching a solution.

2. They are more able to manage uncertainty and ambiguity before reaching a solution.

3. They have a more extensive domain-specific knowledge base with which to generate hypotheses and against which to compare client information.

4. This knowledge base is more organised, structured and accessible to short-term memory.

5. They are better able to perceive patterns and interconnections within this knowledge base, including client-based information.
6. They are able to process and access larger amounts of knowledge automatically.

7. They develop a more comprehensive internal representation of the problem situation.

2.7.2. Discussion

Despite the findings regarding the features of experts and novices there are paradoxically situations where novices actually out-perform experts. Frensch et al (1989, cited in Lichtenberg, 1997) suggest that this is because of the increased inflexibility of experts' information-processing skills as they become more expert. In certain contexts, having a large well-organised and automatic knowledge base actually interferes with effective problem solving. Frensch et al showed this in contexts when "basic level information or nonintegrated information has to be retrieved; or when experts are forced to restructure their existing knowledge to incorporate new, incompatible information, and when existing knowledge has to be deliberately or consciously selected, or new knowledge has to be created" (p.224).

These are very similar to the constraints which operate within the problem situations encountered by educational psychologists (and EPITs during training). The process of trying to understand these problems situations is made challenging by their ill-structured nature. Information-processing theory suggests that, in working with such problems, the interviewer needs to generate a series of hypotheses which are modified against the information provided by the teacher. The theory would argue that all interviewers would process information in this manner. Yet it is clear that some interviewers are more successful than others in understanding client problems. The available research evidence suggests that this is because expert and novice problem solvers differ not only in the quality of their content-guides (domain-specific knowledge and experience), but in their skilfulness in working with the information given to them by the client.

Robinson and Halliday's (1988) research, which will be described in detail in a later section (i.e. section 2.9 in this chapter) suggested that the degree to which interviewers reasoned overtly with client information was highly predictive of the quality
of their subsequent understanding. There is very little published research which has attempted to replicate and extend the validity of Robinson and Halliday's findings on interviewer use of explicit reasoning, which they refer to as accessible reasoning. For the purposes of this section, given that Robinson and Halliday's research will be outlined later, accessible reasoning describes that process by which the interviewer makes explicit to the client, their thinking about the information the client has given them during the course of the interview. In Robinson and Halliday's research accessible reasoning was coded if the interviewer's interpretations or evaluations of the information disclosed to them by the client was done in such a way which enabled the client to confirm it, or to challenge it. This is possible if the interviewer's opinion is supported by factual information or by the presentation of case-related argument.

The majority of studies in the fields of cognition and problem solving have tended to use structured puzzle-like tasks to investigate how people go about problem solving. Yet there is a growing body of literature which argues that, to extend our understanding in these areas more realistic situations need to be employed. Elstein et al (1990) argue and Robinson and Halliday (1988) have shown that "it is possible to do rigorous research on genuine problems (not games, mathematical diversions, or "toy tasks" like the Tower of Hanoi)"(Elstein et al, 1990, p.8). This thesis uses a realistic teacher interview simulation task to see whether the interviewer strategy of accessible reasoning assists problem understanding.

2.8. ARGYRIS AND SCHÔN'S THEORY OF INTERPERSONAL EFFECTIVENESS

Robinson and Halliday's (1988) thinking on the development of problem understanding, and their subsequent investigations into the role played by accessible reasoning which will be described in detail in a later section, was greatly influenced by the pioneering work of Argyris and Schön (1974, 1996) and Argyris (1982, 1993). This section provides a brief overview of Argyris and Schön's theory, so as to provide a context in which to view Robinson and Halliday's work, and ultimately the research on accessible reasoning developed within this thesis.
Argyris and Schõn spent over 40 years looking into the cognitive and interpersonal factors which were related to more effective interpersonal problem solving. In their terms effective problem solving "occurs to the extent that people, (1) are aware of the major variables relevant to the problem, (2) solve the problem in such a way that it remains solved (at least until the external variables are changed), and (3) accomplish the first two goals without reducing the present level of problem solving effectiveness" (Argyris, 1982, p. 88).

Dewey's influence, especially the notion of scientific inquiry within action, on the work of Argyris and Schõn, and by association Robinson and Halliday, should not be underestimated. Dewey believed that most of the situations people are involved with have degrees of inherent doubt. He argued that inquiry starts when there is a doubtful, indeterminate and problematic situation. An inquirer is motivated to make the situation determinate and to restore equilibrium. Inquiry for Dewey combined both mental reasoning and action. For Dewey an inquirer was not a spectator but a participant within a situation of action, seeking to understand and change it. When inquiry resulted in learning it provided both thought and action. Resolving doubt involves a dialogue between the inquirer and the situation (be it a task or another person). The inquirer is involved in constructing the situation to which they also respond. The problems and advantages in any interpersonal dialogue, and the feelings and perceptions thus generated are always to a degree of the participants' making.

Argyris and Schõn (1974, 1996) developed a theory to try to make sense of the cognitive and interpersonal dynamics which they observed when people attempted to communicate and solve problems. They argued that all people have a model or theory in their heads which they use to generate and give consistency to their behaviour. Such models draw people's attention to particular aspects of an interpersonal or organisational situation. They guide their choices about what to say, when and to whom to say it, and how to evaluate the consequences of their actions. For most people such a model is implicit and automatic.

To improve the effectiveness of communication and problem solving, Argyris and Schõn (1996) suggested that such models needed to be made explicit. That is, people need to be helped so they can produce valid information (including undiscussable factors
such as emotional or competency issues), provide informed choice, and achieve a degree of internal commitment to any actions agreed. Within interpersonal problem solving "we must be especially careful to make sure that we do not knowingly or unknowingly kid ourselves and others. The best way to achieve this, it seems to me, is to state our views in ways that allow them to be publicly tested and falsified. To do so, we must make our reasoning explicit and organise it in such a way that it is testable" (Argyris, 1982, p.xx). The "basic assumptions behind ideas or policies are confronted, in which hypotheses are tested publicly and in which the processes are disconfirmable, and not self-sealing" (Argyris, 1982, p.103).

Here the idea of making thinking explicit is highlighted as a behavioural strategy which could lead to improved problem solving. In most problem-solving dialogues many unilateral and unillustrated evaluations are made. That is, people do not often provide concrete examples, or outline the reasoning processes they undertook to reach their judgements. Most people appear to "refrain from testing their attributions and evaluations; to be unaware of the high levels of inference embedded in their constructs; to believe that their ideas are highly concrete and in fact obvious" (Argyris, 1982, p.100). If most conversations are composed of this type of dialogue there is greater "likelihood that the recipient will feel misunderstood and unilaterally judged and hence become defensive" (Argyris, 1982, p.xvii).

To improve interpersonal communication and problem solving an individual needs to make a distinction between their espoused theory, that is what a person is able to tell others about what they think they are doing, and how effective they are, and their theory-in-use (Argyris & Schön, 1974, 1996), that is inferring their theory from the way they actually behaved in a problem-solving situation.

2.8.1. The structure of a theory-in-use

An individual's theory-in-use is made up of three main components. Firstly, there is a set of governing principles or goals which focus attention and give purpose to their actions (e.g., As the educational psychologist I want to be seen as knowledgeable, expert and in control during this teacher interview. I want to be seen as superior and powerful). Secondly, there are behavioural strategies which are repeated or consistent ways of
### Figure 2.3  Model I

<table>
<thead>
<tr>
<th>1  Governing Principles for Action</th>
<th>2  Action Strategies</th>
<th>3  Consequences for the Behavioural World</th>
<th>4  Consequences for Learning</th>
<th>5  Consequences for Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define goals and try to achieve them.</td>
<td>Design and manage the environment unilaterally.</td>
<td>Interviewer seen as defensive.</td>
<td>Self-sealing.</td>
<td></td>
</tr>
<tr>
<td>Maximise winning and minimise losing.</td>
<td>Own and control the task.</td>
<td>Defensive interpersonal and group relationships.</td>
<td>Single-loop learning.</td>
<td>Decreased effectiveness.</td>
</tr>
<tr>
<td>Minimise generating or expressing negative feelings.</td>
<td>Unilaterally protect yourself.</td>
<td>Defensive norms.</td>
<td>Little testing of theories publicly. Much testing of theories privately.</td>
<td></td>
</tr>
<tr>
<td>Be rational.</td>
<td>Unilaterally protect others from being hurt.</td>
<td>Low freedom of choice, internal commitment, and risk taking.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Adapted from Argyris and Schön (1974)*
### Figure 2.4 Model II

<table>
<thead>
<tr>
<th>Governing Principles for Action</th>
<th>Action Strategies</th>
<th>Consequences for the Behavioural World</th>
<th>Consequences for Learning</th>
<th>Consequences for Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid information.</td>
<td>Design situation or environments where participants can be origins and can experience high personal causation.</td>
<td>Interviewer experienced as minimally defensive.</td>
<td>Disconfirmable processes.</td>
<td></td>
</tr>
<tr>
<td>Free and informed choice.</td>
<td>Tasks are controlled jointly.</td>
<td>Minimally defensive interpersonal relations and group dynamics.</td>
<td>Double-loop learning.</td>
<td>Increased long-run effectiveness.</td>
</tr>
<tr>
<td>Internal commitment to the choice and constant monitoring of its implementation.</td>
<td>Protection of self is a joint enterprise and oriented towards growth.</td>
<td>Learning-oriented norms.</td>
<td>Public testing of theories.</td>
<td></td>
</tr>
<tr>
<td>Bilateral protection of others.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Adapted from Argyris and Schön (1974)*
trying to achieve governing principles (e.g., I will avoid challenging the teacher because emotions only cloud the issue, so I will try to highlight the positives and get her on side so I can get my needs met, or I will divert any hint of challenge or emotion by saying "this is not relevant, the real issues we are here to discuss are", or I may use manipulation flattery or power-play to pull rank). Thirdly, there are outcomes which are measured in terms of the task, the individual and the effectiveness of the relationship.

Argyris and Schön's (1974, 1996) research was focused upon the central question of "How do you hold and communicate your views in an open and direct manner which increases the likelihood of effective communication?". On the basis of analysing hundreds of conversational transcripts, from a wide range of contexts and cultures, they formulated a theory of interpersonal effectiveness which they termed Model I and Model II. Figures 2.3 and 2.4 present the governing principles, strategies, and outcomes which underpin both of these models. It is important to stress that, even though the theory is presented in the form of two distinct models, a continuum is probably a more helpful way of viewing real-life situations (i.e. Model I at one end and Model II at the other). In analysing dialogues people will be at different points along the continuum. For the purposes of this section, Model II will be described in some detail as it is of most relevance to our discussion. Readers are referred to Argyris and Schön's (1974, 1996) texts for a fuller description of these frameworks and the theoretical basis which underpins them.

2.8.2. Model II

Governing principles or goals

There are three principles which underpin Model II functioning:

1. **Maximise valid information**

   People who hold this principle are committed to discovering and communicating the "reality" about social and personal situations. They communicate in ways which maximise the chances that relevant information can be tested out and supported or disconfirmed.
2. **Maximise free and informed choice**

Within social situations the "reality" or accuracy of people's opinions, perceptions, evaluations and feelings are often problematic. As a result there is a need to behave towards others in ways which enhance their freedom to confirm or disconfirm one's opinions, and to make different choices. People who hold this principle endeavour to share information with others in ways that increase rather than constrain their choices. However, just giving others choices is not a sufficient condition to meet this principle; it is about encouraging a context in which the genuine sharing and debate of alternative perspectives is actively encouraged.

3. **Maximise internal commitment**

This principle asserts that, when people choose a course of action on the basis of all the relevant information at a given point in time, they are more likely to follow it through than when they do something because of external incentives.

**Strategies**

1. **For valid information:**
   1.1. the person exposes their thinking by making the reasoning processes, including the assumptions and inferences available to the other person(s);

   1.2. the person illustrates with directly audible (observable) data the attributions and evaluations they have made about others;

   1.3. the person minimises the inferential leaps or assumptions that they make. This is especially relevant when such leaps or assumptions could be seen as controversial or likely to be contested;

   1.4. the person detects their own hypotheses (assumptions) and tests them out publicly;
1.5. the person reports other's speech accurately and minimises exaggeration or over-generalisation.

2. **For free and informed choice:**
2.1. the person shares the control of the process by exposing rather than withholding information, especially information that may be controversial or likely to be contested;

2.2. the person decides with the other what information, is and is not, relevant;

2.3. the person tests and checks understandings publicly;

2.4. the person makes the protection of themselves and others a bilateral task rather than privately deciding how to deal with emotions or difficult issues;

2.5. the person encourages the other's involvement and opportunity in influencing them;

3. **For internal commitment:**
3.1. the person probes any doubts or hesitations held by either party about possible courses of action;

3.2. the person encourages self-evaluation, and acts to confirm or disconfirm their validity.

**Outcomes**

1. *Openness and risk taking is experienced by both parties.*

2. *Information about all relevant variables is disclosed, or joint decisions are made about non-disclosure.*

3. *Personal learning opportunities are high.*
### Figure 2.5 Critical dialogue

<table>
<thead>
<tr>
<th>Guiding Principles</th>
<th>Key Strategies</th>
<th>Consequences</th>
</tr>
</thead>
</table>
| Increase valid information for all participants. | Openness about your views, the reasons for them, and their fallibility. | Problem-solving effectiveness is increased via: 
- the greater availability of information; 
- the production of higher quality information. |
| Enhance freedom of informed choice. | Public testing of the adequacy of one's own and other's views and understandings. | Commitment to the process and outcomes of problem-solving is increased. |
| Enhance commitment and responsibility. | Bilateral control of the process and content of the interaction, including the management of emotionally difficult issues. | Emotional issues do not jeopardise problem-solving effectiveness. |

*Adapted from Robinson (1993)*
## Figure 2.6 Four rules of critical dialogue

<table>
<thead>
<tr>
<th>Rules</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Say what you think</strong> (rather than hiding what you think and believing in the absolute correctness of your views).</td>
<td>“I want you to take some responsibility for helping me out of this mess…….”</td>
</tr>
<tr>
<td><strong>Say why you think it</strong> (rather than believing in the absolute correctness of your views and as a result providing no reasons for your views).</td>
<td>“……because I thought you had agreed to help me meet this deadline…..”</td>
</tr>
<tr>
<td><strong>Check out your understanding with other(s)</strong> (rather than not checking and expecting them to know what you think as you were clearly correct all the time).</td>
<td>“Do you remember the arrangement this way?”</td>
</tr>
<tr>
<td><strong>Embed rules 1 to 3</strong> within an interpersonal communications framework which increases the likelihood that others will listen.</td>
<td></td>
</tr>
</tbody>
</table>

*Adapted from Robinson (1993)*
2.9. ROBINSON AND HALLIDAY'S RESEARCH ON ACCESSIBLE REASONING

Robinson was a doctoral student of Argyris and Schön's at Harvard University. On returning to New Zealand she began exploring their concepts of Model I and Model II, and in particular the role of explicit reasoning (which she later referred to as accessible reasoning) in training applied psychologists. The current researcher was a masters student at the University of Auckland, New Zealand when he was first introduced to the work of Argyris and Schön by Robinson. Under Robinson's supervision the current researcher learnt and practised problem-analysis and accessible reasoning skills. This long standing interest in problem analysis and accessible reasoning provided the initial impetus for undertaking the research outlined within this thesis.

The research project conducted by Robinson and Halliday (1988) was concerned with two main questions: "What is meant by reaching a high quality understanding of an ill-structured problem?" and "What interviewer behaviours best predict the achievement of a high quality understanding?" These research questions were investigated by analysing the interview transcripts (of two clients), and associated written problem-analyses (called case reports), within a correlational study involving 30 experienced practitioners (13 vocational guidance counsellors, 13 educational psychologists, and 4 school guidance counsellors) in New Zealand. The participants had to undertake two separate interviews with two different adolescents in exactly the same way as they would when working with such cases in the field.

It is important to note at this stage that Robinson and Halliday (1988) employed parametric statistics to interpret their data. Given the relatively small numbers of participants involved non-parametric statistic would probably have been more appropriate. Within this thesis for the purposes of statistical analyses it was assumed that the measures made recorded responses from underlying rank order scales. As a result non-parametric statistics were used instead of parametric measures (Glegg, 1982; Heyes et al, 1986; Howell, 1989).

To assist participants in structuring their case reports four headings were provided. These headings were given to participants some weeks prior to conducting the interview. To assess the quality of these case reports Robinson and Halliday (1988)
devised a scale measure consisting of nine separate criterion falling under the following four sections:

**Section one:** Identify the various aspects of the presenting problem(s); criterion 1. **accuracy**, criterion 2. **completeness**, and criterion 3. **clarity**.

**Section two:** Describe, with reasons, the most important aspects of the case and give reasons why others were less important; criterion 4. **agreement between participant and experts**, and criterion 5. **soundness of argument for relative importance of aspects**.

**Section three:** Identify the probable current causes of the factors influencing those aspects you have identified as most important; criterion 6. **soundness of argument for causes of priority**.

**Section four:** Describe, with reasons, the steps you would take/recommend regarding further assessment or intervention; criterion 7. **specificity**, criterion 8. **appropriateness**, and criterion 9. **completeness**.

In Robinson and Halliday's study the scale used a 5-point Likert-type scale, with a score of 1 indicating high quality and a score of 5 indicating low quality. Results indicated that the scale produced reliable and consistent judgements about the quality of an interviewer's written understanding of a client's ill-structured problem. An alpha coefficient of 0.87 was reported for the total score on the nine separate ratings. In study two, reported in chapter four of this thesis, a slightly modified version of this scale was used as the measure of problem-analysis quality. In study two, an 8-point Likert-type scale was used to provide greater discrimination on the various criteria.

A full discussion of this scale and its component parts is presented in chapter four. At this stage in the discussion it is important to note that Robinson and Halliday (1988) found the scale to be highly reliable, and yielded high levels of inter-rater
agreement, after training 27% of interviewer transcripts were coded a second time and an inter-rater agreement of 70.1% was reported.

Robinson and Halliday (1988) reported that the average scores on the problem-analyses ratings were slightly skewed to the higher quality end of the scale. A mean total score of 25.80 (sd = 5.80) was reported (range 9 - 45). Interviewers were found to be more incomplete (Criterion 2. Mean = 3.22, sd = 0.72) than inaccurate in their analyses (Criterion 1. Mean = 1.92, sd = 0.95). Participants were also found to achieve relatively lower ratings for their choice of priority aspects of the problem (Criterion 4. Mean = 3.40, sd = 0.87), and for the quality of their arguments about the priorities (Criterion 5. Mean = 3.23, sd = 1.19), and their causes (Criterion 6. Mean = 3.38, sd = 1.01). There were no significant relationships observed between an interviewer's thoroughness of data gathering, the number of interview topics covered during the interview, or the number of distinct topic changes, and the quality of their subsequent analyses. As a result these were not seen as valid dimensions to investigate further within this thesis.

What this study did show was that there was a highly significant correlation between the frequency of interviewers sharing their reasoning out loud with the client, and the quality of their subsequent written analyses (r = -0.46, p < 0.01). Such overt reasoning with the client was termed accessible reasoning. In Robinson and Halliday's research an interviewer's reasoning was coded as being accessible if the interviewer's interpretations or evaluations of the information disclosed to them by the client were done in such a way which enabled the client to confirm them, or to challenge them. This is possible if the opinion is supported by factual information or by the presentation of case-related argument (à la Model II principles).

Robinson and Halliday, argued that the results of their study strongly supported the case that accessible reasoning, as an interviewer strategy, appeared to make a unique contribution to problem understanding by explicitly involving the client in assisting the interviewer to test and refine their understanding of the client's problem. Robinson's later work (1993, 1998) redefined accessible reasoning within her problem-based research methodology as critical dialogue (see Figures 2.5 and 2.6). This approach was adapted for use on the training course at University College London with a fourth step being added, which makes more explicit Robinson's intentions by stressing the importance of
undertaking a "critical dialogue" in such a way that reduces the likelihood of the other person becoming defensive. This acknowledges, once again, the importance of effective interpersonal skills.

2.9.1. Summary

Argyris and Schōn's theory of interpersonal effectiveness, and in particular their notion of making thinking explicit, greatly influenced Robinson and Halliday's (1988) conceptualisation of accessible reasoning. Argyris (1982) stressed the importance of "inviting others to confront one's views, even to alter them, in order to produce action which is based on the most complete, valid information possible, and to which people can become internally committed" (p.103).

Robinson and Halliday's study was published over twelve years ago, but in the interim very little research has resulted, either extending or attempting to replicate the findings on the relationship of accessible reasoning to problem understanding. As discussed in chapter one, many training programmes for counsellors and interviewers place a great deal of emphasis upon collecting accurate information, and on how to communicate such an understanding to the client. However, within such programmes little attention is given to exactly how an interviewer (or counsellor) derives this understanding (Robinson & Halliday, 1987).

One of the major aims of this thesis was to systematically replicate and extend this part of Robinson and Halliday's (1988) earlier study. In particular, this thesis aims to investigate the role accessible reasoning plays in problem understanding, and how it develops as a result of training in a group of EPITs. Around this longitudinal study, four further investigations were undertaken. The first provided a context within which to view training in interviewing and problem-solving skills, the second investigated whether personality and communication style factors add anything to our knowledge of the factors involved in reaching a high quality understanding, the third looked at the effects training may have on the number and type of hypotheses used by EPITs to integrate aspects of the teacher's problem situation, and finally the fourth explored the reactions of a sample of course tutors who had been involved in study one to some of the main findings highlighted in the previous investigations.
Figure 2.7 Problem-analysis framework

Step 1
Clarify the request and check out the need for psychologist’s involvement.

Step 2
Negotiate and contract role.

Step 3
Guiding hypotheses and information gathering.

Step 4
Identify the dimensions of the problem.

Step 5
Integration of problem dimensions.

Step 6
Feedback, agree problem analysis and devise intervention plan.

Step 7
Agree action plan implementation.

Step 8
Evaluation of action.

Step 9
Self-reflection and critical evaluation.
Implicit in Robinson and Halliday's research was a challenge to educational psychology training programmes (and related courses), in that it suggested that courses needed to teach EPITs not only *how* to reason with client data, but *how* to share their developing understandings with the client. Alongside this research Robinson (1987) devised the problem-analysis framework, and explored its usefulness in training psychologists at the University of Auckland, New Zealand, from the early 1980s. Figure 2.7 outlines the nine-steps involved in this framework. Problem-analysis incorporates hypothesis-testing within a problem-reasoning framework which attempts to overcome some of the difficulties inherent in the problem-solving approaches outlined within this chapter. In Monsen et al's (1998) reformulation at UCL, of Robinson's earlier framework, they also drew upon the work of Westera and Burlton-Bennett (1995) who were involved in training at the University of Auckland (personal communications).

The problem-analysis framework enables the educational psychologist to structure and analyse teacher information, which facilitates its understanding by both. It incorporates many of the ideas advanced within this chapter, namely the use of accessible reasoning as a strategy to facilitate this understanding process. The researcher was responsible for devising and teaching the modules on problem analysis, interviewing, and accessible reasoning (critical dialogue) which were shared with the EPITs over the course of the training year. The problem-analysis framework is presented in detail in Appendix A, as it is used to structure practice, and to provide a basis for teaching on the training programme for educational psychologists at UCL. It was from this course that the group of ten EPITs involved in study two (and study two [a] and study two [b]) were selected.

In the discussions so far information-processing theory, the work of Argyris and Schön, and the research work of Robinson and Halliday have provided many useful ways of structuring the processes and identifying the possible strategies involved when an educational psychologist tries to gain a high quality understanding of a teacher's problem. Are there alternative ways of looking at the same processes which could be of assistance? Petty, Heesacker and Hughes (1997) provide an alternative information-processing model. Their model will be described and critiqued in the following section.
2.10. PETTY, HEESACKER AND HUGHES ALTERNATIVE MODEL

Petty et al's (1997) model attempts to integrate both interpersonal and cognitive processes to assist educational psychologists in changing teacher attitudes more effectively. The Elaboration Likelihood Model (ELM) of persuasion proposes that people's attitudes and their perceptions of the attitudes of others guide their subsequent behaviour. As a result, within the teacher-educational psychologist interview, changing problematic teacher attitudes is the key task to effective problem solving. They describe two main routes to changing attitudes. First, there is the 'central route' whereby the educational psychologist encourages the teacher to think about the "substantive merits of a particular proposition" (p.112), called "effortful cognitive activity" (p.109). In the remainder of this section the term 'focused thinking' will be used instead. Second, there is the 'peripheral route' which is a more automatic process influenced by mood and surface cues, such as the status of speaker and involves little focused thinking. This route usually operates when people are not motivated to problem solve; have limited time, or do not see any direct relevance to their situation.

Petty et al quote research which shows that attitudes formed or changed as a result of focused thinking (central route) are more predictive of future behaviour and intentions than are attitudes formed or changed with little active thinking. A crucial factor in working with teacher attitudes is whether the teacher experiences high personal relevance. If teachers are disinterested, and do not see why they are being involved, then they are more susceptible to mood and to the status of speaker than to reasoned argument.

2.10.1. Teacher interviews

Petty et al state that how a problem is defined within a teacher interview is controlled in large part by the teacher. The educational psychologist and the teacher engage in a deliberate problem-solving process which has the selection of a plan for addressing the teacher's presenting concern as one of its goals. Within the model, facilitating new behaviours and changing perspectives is seen as a central role for the educational psychologist who Petty et al see as being motivated to bring about enduring change. The educational psychologist therefore attempts to engage the teacher in focused thinking about the merits or otherwise of particular propositions, because this is more likely to
lead to a change or modification in attitude. The challenge for the educational psychologist is how to elicit this focused thinking in the teacher. The Elaboration Likelihood Model of persuasion is offered as a means of achieving this task.

2.10.2. Elaboration Likelihood Model (ELM) of persuasion

The model assumes that the teacher is motivated and able to think about the issues under discussion. The success of problem solving will be dependant upon how effective the educational psychologist is in persuading the teacher. Persuading in this sense means encouraging the teacher to think in a focused way about the communications they are having. How the teacher thinks about an issue, including any arguments and counter arguments is determined by the perceived quality of the arguments presented to them.

The ELM espouses the view that the teacher is an active and equal participant in the problem-solving process. The teacher is seen as trying to make sense out of the dialogue they are having with the educational psychologist. Rather naively they assume that the teacher is motivated to try to integrate new views into their existing belief system. The model places emphasis upon the quality of the arguments presented by the educational psychologist, the interpersonal as well as the cognitive conditions that foster careful and focused thinking, and on the teacher's and educational psychologist's attitudes, knowledge and goals.

One of the goals of the teacher-educational psychologist dialogue is to foster focused thinking on the part of the teacher. This is done so that they will change or modify their attitudes, after a period of thoughtful debate with the educational psychologist. Little information is given on the specific strategies the educational psychologist would use to achieve this task. Petty et al state that what is needed is for the educational psychologist to "encourage an open discussion of the topic by assuming a non-judgemental stance working with" teacher's ideas "rather than rejecting them, emphasising brainstorming and the suspension of evaluation of ideas, and directly asking for counter argument" (p.123).
2.10.3. Critique of model

Both Argyris and Schön's and Perry et al's models are examples of information-processing frameworks which have been developed to try and make sense of interpersonal problem solving. As such they share certain superficial similarities, for example both see human behaviour as being determined by underlying goals or attitudes. These give meaning and consistency to subsequent human action. However, Petty et al's model does not differentiate between espoused theories and theories-in-use. Moreover the majority of their model remains at the level of discovery and invention of espoused knowledge. It does not focus on theory-in-use. Nowhere within their paper do they report or try and explain the discrepancies evident in Argyris and Schön's research between what people say they are doing and what they are actually doing. Most people are unaware of this difference, and so learning to become more effective at interpersonal problem solving involves obtaining feedback identifying any mismatch (Argyris, 1976).

Initially it was hoped that Petty et al's model would provide a useful alternative framework within which to conceptualise the processes involved in an educational psychologist gaining an accurate understanding of a teacher's problem situation. It was assumed that the ELM would integrate interpersonal dimensions with the more cognitive elements involved in problem solving. Unfortunately this was found not to be the case. Petty et al emphasise the crucial role of the educational psychologist in encouraging focused thinking on the part of the teacher. They identify two main mechanisms which can influence attitude change (i.e. central and peripheral routes), with the central route being seen as superior if thoughtful reflection of the issues is required. Yet there is very limited discussion about exactly how this is done. In this respect the model is not particularly illuminating. Instead they talk in general terms about engaging the teacher in an "open discussion" and adopting "a non-judgemental and non-evaluative stance". Yet how do these approaches assist an educational psychologist (and the teacher) to engage in focused thinking which has an element of "eliciting counter arguments" if challenge and critique of both parties views are not also central? No guidance is given on how this could be achieved in an open and straightforward manner.

Without such detail we are forced to conclude, at the moment any way, that Petty and his colleagues make three basic assumptions:
1. They assume that the skills involved in encouraging focused thinking, and the skills to think in a focused way, are either already available to people or they are skills which do not need to be taught.

2. The skills needed to change a teacher's attitude are straightforward and already known to educational psychologists and teachers.

3. There is also the assumption that people will, by and large, respond in a rational way to an educational psychologist who is attempting to change or modify their attitudes, however covert this may be.

Although the work by Petty et al is embedded within a Model I theory of interpersonal problem solving, the crucial issue here is that assumptions are made that are never tested yet are asserted as being valid. Petty et al state that "personal responsibility and involvement are expected to enhance issue-relevant thinking and increase the likelihood of central route attitude change" (p.122), and "suspension of evaluation of idea" (p.123). Paradoxically, even though Petty et al espouse that the teacher controls the interview (p.119), the educational psychologist's task is to persuade them. But what criteria are used to judge the relevant merits of either party's views when a "non-judgemental stance" is adopted, at least at an espoused level?

At an espoused level Petty et al's model suggests that the educational psychologist aims to work with the teacher to encourage an open and straightforward discussion so as to solve work-related problems. The educational psychologist offers his or her views and seeks counter arguments from the teacher. This would seem to suggest an attempt to test the accuracy or otherwise of the educational psychologist's view, or understanding of the teacher's problem. However, implicit in the model is the idea of deception and manipulation on the part of the educational psychologist. The educational psychologist's untested views are used as the basis to make unilateral judgements about the teacher's level of "motivation" and "involvement". The implicit assumption is that the educational psychologist can and should act on the basis of their own judgements. As a result whatever testing occurs is likely to be done privately. Petty et al also allude
to the importance of impression management by cautioning educational psychologists that, when they are "engaging in attempts to influence others' attitudes, the psychologist must be wary of the possible negative outcomes if persuasion is viewed as 'manipulation'" (p.129). Given our discussion so far such an attribution on the part of the teacher would seem to be valid.

Petty et al suggest four strategies which the educational psychologist can use to influence the direction of the teacher's thinking. Firstly, the educational psychologist can "frame a rationale for his or her recommendation that matches the consultee's pre-existing beliefs" (p.126). Even when there may be evidence that the teacher's beliefs are actually contributing to the problem? No specific guidance is given to address this concern. Secondly, the educational psychologist "can activate an alternative frame of reference for viewing the situation or problem". Even when there is no evidence to support the legitimacy of such alternative re-frames? Again no specific guidance is given to address this concern. Thirdly, the educational psychologist "can select an intervention that fits with the consultee's thinking about the problem" (p.127), even when there is evidence that such thinking is part of the problem? Again no specific guidance is given. Finally, they suggest that the educational psychologist "can reduce counter-arguing (yet this was seen as a core activity?) by not forewarning the consultee of an intent to persuade" (p.127). They go on to stress that "the psychologist should attempt to decrease the perception of an intent to persuade by emphasising consultee's freedom to accept or to reject any recommendation offered, eliciting and respecting consultee's beliefs about the problem" (p.127). But what does the educational psychologist do if the teacher holds a strongly opposite view to their own? Again no guidance is given to address this concern.

2.10.4. Conclusions
Petty et al developed a model of attitude change and influence (Elaboration Likelihood Model of persuasion) which they proposed would be helpful to educational psychologists working with teachers to solve work-related problems. The model proposes that if the educational psychologist wants to achieve long-lasting change in teacher attitudes and beliefs then they must engage the teacher in focused thinking.

To do this the teacher must have the motivation and ability to process the new
information. Yet no guidelines are offered on how the educational psychologist reaches a judgement on these aspects. The teacher must also perceive that they have a personal investment in reaching a solution to their problem. The assumption is that when personal relevance is high, people are more likely to be "motivated to scrutinise the information presented and integrate it with their existing beliefs" (p.130). In addition the educational psychologist needs to frame his or her arguments in ways that are consistent with teacher's "existing beliefs, values, and ways of thinking" (p.131). The assumption is that this approach will lead the teacher to feel more positively about the new ideas and thus increases the effectiveness of persuasion.

This thesis is concerned with what interviewer behaviours are associated with assisting the interviewer to gain a high quality understanding of a teacher's problem situation. Information-processing and the theoretical work of Argyris and Schön and the research work of Robinson and Halliday provided a helpful way of conceptualising this process and gave specific guidance to potential strategies. Petty et al's model does not provide as useful an alternative to Argyris and Schön's formulation. Petty and his colleagues have developed their model from research designed to understand and predict, but say nothing about how to make events come about where there is an attempt to match espoused theory with theory-in-use (Argyris, 1976). This is especially so in the task of identifying what strategies are involved in helping an educational psychologist gain an accurate understanding of a teacher's problem situation. At the moment the work presented in their paper remains very much at the level of espoused theory.

The next chapter describes the results of a comprehensive survey of training courses for EPITs in England, Wales and Northern Ireland. This represents the first survey of its type, and investigates course tutors' espoused views on aspects of interviewing and problem solving. It provides a context within which to view aspects of actual practice (i.e. theory-in-use) in one of the courses surveyed. This investigation is detailed in study two (chapter four).
CHAPTER THREE

STUDY ONE: A survey of educational psychology training courses in England, Wales and Northern Ireland, investigating views on interviewing and problem solving

3.1. RATIONALE AND AIMS FOR STUDY ONE

Developing effective interviewing and problem-solving skills forms an important component within the curriculum of all training courses within England, Wales and Northern Ireland. This emphasis is clearly outlined in the various curriculum guidance notes issued to courses by the BPS. Despite the importance placed upon interviewing and problem solving, in both training and subsequent practice, very little published information is available on exactly what frameworks and strategies training courses teach, how they teach them, and how effective the approaches are.

Within the context of training in the United Kingdom, the work of Carroll (1974) is one of only a few studies which has attempted to survey course tutors' views. Carroll surveyed six clinical and nine educational psychology training course tutors' views on interviewing. In this section, the information from the educational psychology training courses will be presented. Carroll found that almost 100% of tutors considered that training in interviewing skills was important/to very important to the work of an educational psychologist. About 67% included interviewing as a distinct and separate lecture or seminar topic within their course curriculum. The remainder, at this period in the early 1970s, saw interviewing very much within the bounds of the psychometric child assessment interview.

All tutors reported that EPITs had opportunities to observe real-life interviews, or watch simulated role plays involving skilled practitioners. Only 22% of courses involved their EPITs in EPIT-EPIT or EPIT-tutor role plays. All courses did observe trainee "real-life" interviews with clients, by either sitting in the room or watching from behind a two-way mirror. In 78% of courses, tutors listened to tape recordings of EPIT interviews, and in 56% of courses tutors watched video recordings. All courses
mentioned the need for increased technical assistance, so that they could make the most of the technology available to them. In terms of assessing the interviewing skills of EPITs, 33% did so at a theoretical level via essays and examination, and 89% did so at a practical level via tutor or fieldwork supervisor ratings. Most tutors reported, that in terms of the courses aims for interviewing, that they were only partially successful.

There are certainly limitations with Caroll's (1974) survey, which he acknowledges (e.g., the "incomplete sample", missing data for some of the questions, p.246). However, Caroll's work does provide one of the few published surveys of its kind, and was a useful starting point for this research. It also serves to illustrate the paucity of primary information which is available in this area.

A major aim of this thesis was to survey the views of course directors (or delegated course tutors) on aspects of interviewing and problem solving. In particular their perspectives on what they thought were the important aspects to teach, and how they went about teaching them were sought. Views were also sought on what personality and communication style characteristics they thought contributed to effective interviewing and problem solving. This study is one of the first, in recent years, to survey the views of course directors (or their representatives) on interviewing and problem solving. The results will supply a comprehensive overview of the area which will provide a context for subsequent studies reported within this thesis. Finally it gives a useful baseline measure for future researchers.

3.2. METHOD

3.2.1. Instrument, dependent variable, measures and scoring procedures

Data for this study were gathered through the use of an Interviewing and Problem Solving (IPS) Questionnaire, a copy of which is presented in Appendix one. This questionnaire was completed by the tutor who had lead responsibility for interviewing and problem solving on the various courses. Thirteen of the 14 training courses in England, Wales, and Northern Ireland returned questionnaires. An initial draft of the IPS Questionnaire was piloted on a small sample of course tutors who taught on training
courses in the London area and who were not directly involved in teaching interviewing and problem solving (N = 4). These tutors did not complete the final version of the questionnaire which was designed for those tutors who had direct responsibility for teaching interviewing and problem solving. On the basis of feedback received from these tutors, alterations were made to the wording of a number of items, and to the layout of several sections.

**IPS Questionnaire**

The IPS Questionnaire consisted of two main sections. Section One, was concerned with course tutors' views on interviewing, and Section Two, which mirrored section one in terms of layout and wording, was concerned with their views on problem solving. The IPS was used to gather all the information used in this descriptive study.

**Section One (Interviewing)** consisted of 11 separate questions.

**Question 1** asked respondents if their course taught interviewing skills. (Respondents had to answer, 1 = Yes, or 2 = No).

**Question 2**, if respondents answered Yes to question 1, then they were asked to indicate, on a 4-point scale, how many hours were set aside for teaching interviewing skills (i.e. 1 = 1 to 3 hours; 2 = 4 to 6 hours; 3 = 7 to 9 hours; and 4 = other).

**Question 3** listed 11 teaching activities which may have been used to teach interviewing skills. The question was in two parts: first respondents were asked to indicate which of the 11 approaches they used on their course (i.e. 1 = Used, and 0 = Not used); secondly, using a 1 to 8 Likert-type scale, they were asked to rate how effective each of the approaches chosen was to teaching interviewing skills (i.e. 1 = Least effective, and 8 = Most effective).

**Questions 4 and 5**, these open questions asked tutors to firstly outline the interviewing approach (es) they teach on their courses, and secondly to comment on what types of opportunities are provided for giving EPITs feedback and rating their interview skills.
The data from these questions were not used due to the small number of responses received.

Questions 6, and 7 used a 1 to 8 Likert-type scale, and asked course tutors how important interviewing was to the work of an educational psychologist, and how effectively they thought their course taught such skills (i.e. 1 = Not important/effectively, and 8 = Very important/effectively).

Question 8, this open question asked tutors to comment on how they ensure that EPITs are competent in conducting initial interviews. The data from this question were not used due to the small number of responses received.

Question 9 listed 18 interview strategies which may have been taught on the training courses. The question was in two parts and asked respondents: firstly to indicate which of the 18 strategies they taught on their course (i.e. 1 = Used, and 0 = Not used); and secondly, using a 1 to 8 Likert-type scale, to rate how important each of the strategies selected was to successful interviewing (i.e. 1 = Not important, and 8 = Very important).

Question 10 collected tutor perceptions on a range of personality and communication style factors. This was done to investigate if such variables were seen as being important to successful interviewing. The question listed five personality characteristics (taken from the NEO Five-Factor Inventory (Big-5), Costa & McCrae, 1989, 1992) and three communication style factors (taken from the Norton Communication Style Questionnaire, Short Form, McManus, Kidd & Aldous, 1997). Both of these measures are described in much greater detail in chapter five (study 2a) where they are used as the main sources of data in that study. For current purposes an overview of what was presented in this question is outlined below.

The NEO Five-Factor Inventory, commonly referred to as the Big-5, is a 60-item pencil-and-paper, self-report measure. Conceptually, it incorporates the widely used five-factor model of trait personality (i.e. Agreeableness, Conscientiousness, Extroversion,
Neuroticism and Openness). For the present purposes, the five trait headings were listed along with their descriptors. Respondents were asked to rate how important each factor was to successful interviewing using a 1 to 8 Likert-type scale (i.e. 1 = Not important, and 8 = Very important).

The Norton Communication Style Questionnaire (Short Form), is an 18-item, self-report measure, which samples perceptions of respondents' communication style on three subscales, Dominant, Effective and Non-verbal. For the present purposes, the three subscale headings were listed along with their descriptors. Respondents were asked to rate how important each factor was to successful interviewing using a 1 to 8 Likert-type scale (i.e. 1 = Not important, and 8 = Very important).

Question 11 listed, in random order, the six descriptors for each of the five personality characteristics. This was done for two main reasons - firstly to gain tutors' perceptions on how relevant each descriptor is to successful interviewing, and secondly to collect data so that the intercorrelations between the various descriptors could be investigated. The Norton descriptors were not included, and on hindsight this is a weakness of this question. The facets and their descriptors are Agreeableness: trust, straightforwardness, altruism, compliance, modesty, tender-minded; Conscientiousness: competence, order, dutifulness, achievement-striving, self-discipline, deliberation; Extroversion: warmth, gregariousness, assertiveness, activity, excitement-seeking, positive emotions; Neuroticism: anxiety, angry-hostility, depression, self-consciousness, impulsiveness, vulnerability; and Openness: fantasy, aesthetics, feelings, actions, ideas, values. Data from this question were not used in this study due to the small number of responses received.

Section Two (Problem Solving) consisted of 11 separate questions. Question 12 asked respondents if their course taught problem-solving skills. (Respondents had to answer 1 = Yes, or 2 = No).

Question 13, if respondents answered Yes to question 12, then they were asked to indicate, on a 4-point scale, how many hours were set aside on their programme for
teaching problem-solving skills (i.e. 1 = 1 to 3 hours; 2 = 4 to 6 hours; 3 = 7 to 9 hours; and 4 = other).

Question 14 listed 11 teaching activities, which may have been used to teach problem-solving skills. The question was in two parts: first respondents were asked to indicate which of the 11 approaches they used on their course (i.e. 1 = Used, and 0 = Not used); secondly using a 1 to 8 Likert-type scale they were asked to rate how effective each of the approaches chosen was to teaching problem-solving skills (i.e. 1 = Least effective, and 8 = Most effective).

Questions 15 and 16, these open questions asked tutors to firstly outline the problem-solving approach (es) they teach on their courses, and secondly to comment on what types of opportunities are provided for giving EPITs feedback and rating their problem-solving skills. Data from these questions were not used in this study due to the small number of responses.

Questions 17 and 18 used a 1 to 8 Likert-type scale, and asked course tutors how important problem solving was to the work of an educational psychologist, and how effectively they thought their course taught such skills (i.e. 1 = Not important/effectively, and 8 = Very important/effectively).

Question 19, this open question asked tutors to comment on how they ensure that EPIT’s are competent in problem solving. Data from this question were not used in this study due to the small number of responses received.

Question 20 listed 9 problem-solving steps which may have been taught on the training courses. The question was in two parts and asked respondents firstly to indicate which of the 9 steps they taught on their course (i.e. 1 = Used, and 0 = Not used); and secondly, using a 1 to 8 Likert-type scale, to rate how important each of the steps selected were to successful problem solving (i.e. 1 = Not important, and 8 = Very important).
Question 21 collected tutor perceptions on a range of personality and communication style factors. This was done to investigate if such variables were seen as being important to successful problem solving. The question listed the five personality characteristics from the Big-5 Inventory (i.e. Agreeableness, Conscientiousness, Extroversion, Neuroticism and Openness), and the three communication style factors from the Norton (i.e. Dominant, Effective and Non-verbal). For the present purposes the trait headings were listed along with their descriptors. Respondents were asked to rate how important each characteristic/factor was to successful problem solving using a 1 to 8 Likert-type scale (i.e. 1 = Not important, and 8 = Very important).

Question 22 listed, in random order, the six descriptors for each of the five personality characteristics. This was done for two main reasons, firstly to gain tutors' perceptions on how relevant each descriptor is to successful problem solving, and secondly to collect data so that the intercorrelations between the various descriptors could be investigated. The Norton descriptors were not included, and on hindsight this is a weakness of this question. The facets and their descriptors are Agreeableness: trust, straightforwardness, altruism, compliance, modesty, tender-minded; Conscientiousness: competence, order, dutifulness, achievement-striving, self-discipline, deliberation; Extroversion: warmth, gregariousness, assertiveness, activity, excitement-seeking, positive emotions; Neuroticism: anxiety, angry-hostility, depression, self-consciousness, impulsiveness, vulnerability; and Openness: fantasy, aesthetics, feelings, actions, ideas, values. Data from this question were not used in this study due to the small number of responses received.

3.2.2. Participants and procedure
A covering letter to course directors was sent along with the IPS Questionnaire to all of the 14 training courses for EPITs in England, Wales and Northern Ireland (Birmingham, Bristol, Cardiff, Exeter, Institute of Education, Manchester, Newcastle, Nottingham, Sheffield, Southampton, Tavistock, University College London, University of East London, Queen's Belfast). (A copy of the covering letter is presented in Appendix One.) The covering letter asked course directors to give the questionnaire to the
Table 3.1 Approaches used to teach interviewing, and ratings of effectiveness

<table>
<thead>
<tr>
<th>Possible approaches to teaching interviewing skills</th>
<th>Number of respondents (N=13)</th>
<th>Percentage of respondents</th>
<th>Median ratings of effectiveness (a)</th>
<th>Interquartile range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Pre-readings</td>
<td>7</td>
<td>54 %</td>
<td>3.00</td>
<td>2.00</td>
</tr>
<tr>
<td>B. Follow-up readings</td>
<td>11</td>
<td>85 %</td>
<td>4.00</td>
<td>1.00</td>
</tr>
<tr>
<td>C. Role plays (trainee-trainee)</td>
<td>9</td>
<td>69 %</td>
<td>6.00</td>
<td>2.25</td>
</tr>
<tr>
<td>D. Feedback on role play</td>
<td>8</td>
<td>62 %</td>
<td>7.00</td>
<td>1.75</td>
</tr>
<tr>
<td>E. Video and audio tape analysis of role play</td>
<td>6</td>
<td>46 %</td>
<td>7.50</td>
<td>3.00</td>
</tr>
<tr>
<td>F. Lecture input</td>
<td>9</td>
<td>69 %</td>
<td>6.00</td>
<td>1.00</td>
</tr>
<tr>
<td>G. Tutor demonstration</td>
<td>9</td>
<td>69 %</td>
<td>6.00</td>
<td>1.75</td>
</tr>
<tr>
<td>H. Watch video of EP interviewing teacher</td>
<td>4</td>
<td>30 %</td>
<td>6.50</td>
<td>1.75</td>
</tr>
<tr>
<td>I. Teach one framework in detail</td>
<td>7</td>
<td>54 %</td>
<td>7.00</td>
<td>1.00</td>
</tr>
<tr>
<td>J. Present a range of frameworks</td>
<td>11</td>
<td>85 %</td>
<td>5.00</td>
<td>3.00</td>
</tr>
<tr>
<td>K. Follow-up placement exercises</td>
<td>9</td>
<td>69 %</td>
<td>7.00</td>
<td>2.00</td>
</tr>
</tbody>
</table>

NOTE: a = To measure effectiveness a 1 to 8 Likert-type scale was used with 1 being 'least effective', and 8 being 'most effective'. Median scores are reported.
Table 3.2 Ratings of importance of interviewing skills, and how effectively taught

<table>
<thead>
<tr>
<th></th>
<th>Number of respondents (N=13)</th>
<th>Percentage of respondents</th>
<th>Median ratings of importance and effectiveness (a)</th>
<th>Interquartile Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. How important are initial interviewing skills to the work of an EP?</td>
<td>13</td>
<td>100 %</td>
<td>8.00</td>
<td>1.00</td>
</tr>
<tr>
<td>7. How effectively do you think your course teaches initial interviewing skills?</td>
<td>13</td>
<td>100 %</td>
<td>6.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

NOTE:  a = To measure importance/effectiveness a 1 to 8 likert-type scale was used with 1, being 'not important/effectively' and 8, being 'very important/effectively'. Median scores are reported.
Table 3.3 Interview strategies taught, and ratings of importance

<table>
<thead>
<tr>
<th>Possible interview strategies</th>
<th>Number of respondents (N=13)</th>
<th>Percentage of respondents</th>
<th>Median rating of importance (a)</th>
<th>Interquartile range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Using open questions</td>
<td>13</td>
<td>100 %</td>
<td>6.00</td>
<td>1.25</td>
</tr>
<tr>
<td>B. Using closed questions</td>
<td>11</td>
<td>85 %</td>
<td>4.00</td>
<td>3.00</td>
</tr>
<tr>
<td>C. Active listening</td>
<td>13</td>
<td>100 %</td>
<td>8.00</td>
<td>1.75</td>
</tr>
<tr>
<td>D. Sharing your reasoning aloud with client</td>
<td>11</td>
<td>85 %</td>
<td>7.00</td>
<td>2.00</td>
</tr>
<tr>
<td>E. Paraphrasing client statements</td>
<td>13</td>
<td>100 %</td>
<td>6.00</td>
<td>2.5</td>
</tr>
<tr>
<td>F. Reflecting back to client:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Content</td>
<td>13</td>
<td>100 %</td>
<td>6.00</td>
<td>3.00</td>
</tr>
<tr>
<td>- Feelings</td>
<td>11</td>
<td>85 %</td>
<td>6.00</td>
<td>3.00</td>
</tr>
<tr>
<td>G. Giving advice/suggestions</td>
<td>9</td>
<td>69 %</td>
<td>4.00</td>
<td>2.50</td>
</tr>
<tr>
<td>H. Confronting/challenging client</td>
<td>10</td>
<td>77 %</td>
<td>4.50</td>
<td>2.00</td>
</tr>
<tr>
<td>I. Giving information</td>
<td>11</td>
<td>85 %</td>
<td>6.00</td>
<td>3.00</td>
</tr>
<tr>
<td>J. Non-verbal communication</td>
<td>13</td>
<td>100 %</td>
<td>7.00</td>
<td>1.25</td>
</tr>
<tr>
<td>K. Planning structure beforehand</td>
<td>12</td>
<td>92 %</td>
<td>6.50</td>
<td>2.50</td>
</tr>
<tr>
<td>L. Allowing lots of time for client questions</td>
<td>10</td>
<td>77 %</td>
<td>7.00</td>
<td>1.00</td>
</tr>
<tr>
<td>M. Interpreting information</td>
<td>10</td>
<td>77 %</td>
<td>7.00</td>
<td>1.00</td>
</tr>
<tr>
<td>N. Developing hypotheses</td>
<td>11</td>
<td>85 %</td>
<td>7.00</td>
<td>2.00</td>
</tr>
<tr>
<td>O. Framing questions to test hypotheses</td>
<td>10</td>
<td>77 %</td>
<td>7.00</td>
<td>2.00</td>
</tr>
<tr>
<td>P. Checking with the client on the accuracy of your hypotheses</td>
<td>11</td>
<td>85 %</td>
<td>7.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Q. Goals setting with client</td>
<td>11</td>
<td>85 %</td>
<td>7.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

NOTE:  a = To measure importance a 1 to 8 Likert-type scale was used with 1 being ‘not important’ and 8 being ‘very important’. Median scores are reported.
member(s) of their team who took responsibility for co-ordinating the interviewing and problem solving components of their programme. Initially, two months were given for the return of the questionnaires. However, this corresponded with the summer vacation.

As a result, follow-up prompts (by telephone and e-mail) and a three-month extension to the deadline were needed. Of the 14 questionnaires sent out, 13 were eventually returned, giving a return rate of 93%. This response rate is very high, and despite the small sample size provides a basis upon which to summarise course tutors' views on interviewing and problem solving (Tuckman, 1978).

3.2.3. Questionnaire analysis
Most data for this study were collected using 1 to 8 Likert-type rating scales. For the purposes of analysis, it was assumed that the measures recorded responses from an underlying rank order scale. As such, non-parametric descriptive statistics were used (Glegg, 1982; Heyes, Hardy, Humphreys & Rookes, 1986; Howell, 1989). Where relevant, percentages, medians and interquartile ranges are given. For between group comparisons of medians the Mann-Whitney statistic was employed. The SPSS computer package held on disk at the Psychology Department at University College London (Version 7.5) was used for all statistical analyses.

3.3. RESULTS

3.3.1. Section One (Interviewing)
Question 1 results showed that 100% of course tutors stated that their course directly taught interviewing skills to their EPITs.

Question 2 results showed that one course spent between 1 to 3 hours (8%) teaching interviewing skills, four courses allocated between 4 to 6 hours (31%), a further four courses spent between 7 to 9 hours (31%), and four marked "other" (31%). Three of these four courses provided approximate timings, with one course allocating about 12 hours (8%), whilst two courses set aside about 15 hours (15%).
Table 3.4  Ratings of importance of personality and communication style factors to interviewing

<table>
<thead>
<tr>
<th>Personality/communication style factors</th>
<th>Number of respondents (N=13)</th>
<th>Percentage of respondents</th>
<th>Median ratings of importance (a)</th>
<th>Interquartile range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Big-5 measure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Agreeableness</td>
<td>13</td>
<td>100 %</td>
<td>7.00</td>
<td>2.25</td>
</tr>
<tr>
<td>- Conscientiousness</td>
<td>13</td>
<td>100 %</td>
<td>7.00</td>
<td>2.00</td>
</tr>
<tr>
<td>- Extroversion</td>
<td>13</td>
<td>100 %</td>
<td>6.00</td>
<td>1.50</td>
</tr>
<tr>
<td>- Neuroticism</td>
<td>13</td>
<td>100 %</td>
<td>2.00</td>
<td>2.25</td>
</tr>
<tr>
<td>- Openness</td>
<td>13</td>
<td>100 %</td>
<td>7.00</td>
<td>1.25</td>
</tr>
<tr>
<td><strong>Norton measure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Dominant</td>
<td>13</td>
<td>100 %</td>
<td>1.00</td>
<td>2.75</td>
</tr>
<tr>
<td>- Effective</td>
<td>13</td>
<td>100 %</td>
<td>8.00</td>
<td>1.00</td>
</tr>
<tr>
<td>- Non-verbal</td>
<td>13</td>
<td>100 %</td>
<td>7.00</td>
<td>2.00</td>
</tr>
</tbody>
</table>

NOTE:  a = To measure importance a 1 to 8 Likert-type scale was used with 1 being ‘not important’ and 8 being ‘very important’. Median scores are reported.
Table 3.5 Approaches used to teach problem solving, and ratings of effectiveness

<table>
<thead>
<tr>
<th>Possible approaches to teaching problem-solving skills</th>
<th>Number of respondents (N=13)</th>
<th>Percentage of respondents</th>
<th>Median ratings of effectiveness (a)</th>
<th>Interquartile range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Pre-readings</td>
<td>8</td>
<td>73 %</td>
<td>4.00</td>
<td>0.75</td>
</tr>
<tr>
<td>B. Follow-up readings</td>
<td>9</td>
<td>82 %</td>
<td>4.00</td>
<td>1.50</td>
</tr>
<tr>
<td>C. Role plays (trainee-trainee)</td>
<td>10</td>
<td>91 %</td>
<td>6.50</td>
<td>3.00</td>
</tr>
<tr>
<td>D. Feedback on role play</td>
<td>10</td>
<td>91 %</td>
<td>6.00</td>
<td>3.00</td>
</tr>
<tr>
<td>E. Video and audio tape analysis of role play</td>
<td>6</td>
<td>55 %</td>
<td>4.50</td>
<td>3.00</td>
</tr>
<tr>
<td>F. Lecture input</td>
<td>9</td>
<td>82 %</td>
<td>6.00</td>
<td>2.25</td>
</tr>
<tr>
<td>G. Tutor demonstration</td>
<td>7</td>
<td>64 %</td>
<td>6.00</td>
<td>2.00</td>
</tr>
<tr>
<td>H. Watch video of EP employing a problem-solving approach</td>
<td>3</td>
<td>27 %</td>
<td>6.00</td>
<td>0.00</td>
</tr>
<tr>
<td>I. Teach one framework in detail</td>
<td>5</td>
<td>46 %</td>
<td>7.00</td>
<td>1.75</td>
</tr>
<tr>
<td>J. Present a range of frameworks</td>
<td>10</td>
<td>91 %</td>
<td>6.50</td>
<td>3.00</td>
</tr>
<tr>
<td>K. Follow-up placement exercises</td>
<td>8</td>
<td>73 %</td>
<td>8.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

NOTE:  a = To measure effectiveness a 1 to 8 Likert scale was used with 1 being 'least effective', and 8 being 'most effective'. Median scores are reported.
<table>
<thead>
<tr>
<th></th>
<th>Number of respondents (N=13)</th>
<th>Percentage of respondents</th>
<th>Ratings of importance and effectiveness (a)</th>
<th>Interquartile range</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. How important are problem-solving skills to the work of an EP?</td>
<td>13</td>
<td>100 %</td>
<td>8.00</td>
<td>1.00</td>
</tr>
<tr>
<td>18. How effectively do you think your course teaches problem-solving skills?</td>
<td>13</td>
<td>100 %</td>
<td>6.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

NOTE:  

a = To measure importance/effectiveness a 1 to 8 Likert-type scale was used with 1 being 'not important/effectively' and 8 being 'very important/effectively'. Median scores are reported.
Question 3 results, detailed in Table 3.1 show that 85% of courses used follow-up readings and presented a range of frameworks, 69% used role plays between EPITs, lecture input, tutor demonstration, and follow-up placement exercises, 62% gave feedback on EPITs' role plays, and 54% used pre-readings and taught one framework in detail, 46% of courses used video or audio analysis of role plays, and only 30% watched a video of an educational psychologist interviewing a teacher to teach interviewing skills to their EPITs.

Of the these teaching approaches, respondents rated video or audio tape analysis of role plays, as being the most effective, with feedback on role plays, teaching one framework in detail and follow-up placement exercises closely following. The use of pre-readings, and follow-up readings, were seen by respondents as being of more limited value.

Questions 6 and 7 results, detailed in Table 3.2, show that 100% of course tutors viewed interviewing skills as being very important to the work of an educational psychologist. Similarly, 100% of tutors saw that their course was effective in teaching such skills to its EPITs.

Question 9 results, presented in Table 3.3, indicate that 100% of course tutors stated that they taught the following strategies - the use of open questions, active listening, paraphrasing client statements, reflecting back to clients the content of their statements and the importance of non-verbal communications during an interview. Of these strategies, active listening and non-verbal communications were seen as being very important to effective interviewing.

Eighty-five per cent of tutors stated that they taught EPITs to share their reasoning out loud with clients, 77% taught that it was important to allow time for client questions, and the need to interpret client information, 85% taught EPITs to develop hypotheses, to check out with the client the accuracy of these hypotheses, and to goal set with clients. Seventy-seven per cent taught the need to frame questions to test out hypotheses with clients. All of these strategies were perceived by respondents as being very important to effective interviewing.
Table 3.7  Problem-solving steps taught, and ratings of importance

<table>
<thead>
<tr>
<th>Possible problem-solving steps</th>
<th>Number of respondents (N=12)</th>
<th>Percentage of respondents</th>
<th>Median rating of importance (a)</th>
<th>Interquartile range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Define and clarify problem situation</td>
<td>12</td>
<td>100 %</td>
<td>8.00</td>
<td>1.00</td>
</tr>
<tr>
<td>B. Analyse the forces affecting the problem situation</td>
<td>12</td>
<td>100 %</td>
<td>7.50</td>
<td>1.75</td>
</tr>
<tr>
<td>C. Encourage client to select a priority issue</td>
<td>11</td>
<td>92 %</td>
<td>7.00</td>
<td>1.00</td>
</tr>
<tr>
<td>D. Collect information on the priority issue</td>
<td>12</td>
<td>100 %</td>
<td>7.50</td>
<td>1.75</td>
</tr>
<tr>
<td>E. Identify probable factors contributing to the priority issue</td>
<td>12</td>
<td>100 %</td>
<td>7.00</td>
<td>2.00</td>
</tr>
<tr>
<td>F. Specify a desired goal</td>
<td>11</td>
<td>92 %</td>
<td>7.00</td>
<td>2.00</td>
</tr>
<tr>
<td>G. Jointly plan intervention</td>
<td>12</td>
<td>100 %</td>
<td>8.00</td>
<td>1.00</td>
</tr>
<tr>
<td>H. Support client to implement</td>
<td>12</td>
<td>100 %</td>
<td>7.00</td>
<td>1.75</td>
</tr>
<tr>
<td>I. Evaluate the effectiveness of actions undertaken and recycle through steps......</td>
<td>12</td>
<td>100 %</td>
<td>8.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

NOTE:  

a = To measure importance a 1 to 8 Likert scale was used with 1 being 'not important' and 8 being 'very important'. Median scores are reported.
The use of closed questions, giving advice or suggestions, and confronting or challenging clients were all seen as being less important to the development of an effective interview. Even though these strategies were perceived by respondents as being less effective, nonetheless 85% of courses still taught closed questions, 69% taught giving advice and suggestions to clients, and 77% taught confronting and challenging of clients.

Question 10, Table 3.4 outlines, that of the Big-5 factors, *Agreeableness*, *Conscientiousness* and *Openness* were all seen as being very important, whilst *Extroversion* was seen as being a slightly less important personality characteristic for a successful interviewer. *Neuroticism* was seen as not being an important characteristic for an interviewer to have. Of the three Norton factors, *Effective* and *Non-verbal* features were seen as being very important characteristics for a successful interviewer, whilst *Dominant* features were seen as less important.

### 3.3.2. Section Two (Problem Solving)

**Question 12**, 100% of course tutors stated that they did teach problem-solving skills to their EPITs.

**Question 13** results showed that two courses allocated between 4 to 6 hours (17%) to teach problem-solving skills, a further three courses spent between 7 to 9 hours (25%), and seven marked "other" (58%). Unfortunately, none of those who had marked "other" indicated exactly how many hours they did spend. This was a weakness with the design of the question. On hindsight this question could have either left course tutors to fill in the number of hours and these could have been coded later, or given more specific options. In addition, one respondent who had marked Yes to Question 12, did not mark this question. All that can be concluded from this question is that the median number of hours courses spend on teaching problem-solving skills is above 9.
Table 3.8  Ratings of importance of personality and communication style factors to problem solving

<table>
<thead>
<tr>
<th>Personality/communications style factors</th>
<th>Number of respondents (N=13)</th>
<th>Percentage of respondents</th>
<th>Median ratings of importance (a)</th>
<th>Interquartile range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Big-5 measure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Agreeableness</td>
<td>13</td>
<td>100 %</td>
<td>7.00</td>
<td>2.00</td>
</tr>
<tr>
<td>– Conscientiousness</td>
<td>13</td>
<td>100 %</td>
<td>7.00</td>
<td>1.00</td>
</tr>
<tr>
<td>– Extroversion</td>
<td>13</td>
<td>100 %</td>
<td>5.00</td>
<td>1.75</td>
</tr>
<tr>
<td>– Neuroticism</td>
<td>13</td>
<td>100 %</td>
<td>2.00</td>
<td>2.00</td>
</tr>
<tr>
<td>– Openness</td>
<td>13</td>
<td>100 %</td>
<td>7.00</td>
<td>1.75</td>
</tr>
<tr>
<td><strong>Norton measure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Dominant</td>
<td>13</td>
<td>100 %</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>– Effective</td>
<td>13</td>
<td>100 %</td>
<td>8.00</td>
<td>1.00</td>
</tr>
<tr>
<td>– Non-verbal</td>
<td>13</td>
<td>100 %</td>
<td>6.50</td>
<td>2.50</td>
</tr>
</tbody>
</table>

NOTE:  

a = To measure importance/effectiveness a 1 to 8 Likert-type scale was used with 1 being 'not important' and 8 being 'very important'. Median scores are reported.
Table 3.9  Wilcoxon scores for comparison of tutors’ perception of relevance of personality and communication style factors to interviewing and problem solving

<table>
<thead>
<tr>
<th>Measures</th>
<th>Interviewing vs Problem solving</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personality characteristics</strong></td>
<td></td>
</tr>
<tr>
<td>Neuroticism</td>
<td>20.00 0.78</td>
</tr>
<tr>
<td>Extroversion</td>
<td>46.00 0.06</td>
</tr>
<tr>
<td>Openness</td>
<td>19.50 0.34</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>18.50 0.94</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>22.00 0.56</td>
</tr>
<tr>
<td><strong>Communication style factors</strong></td>
<td></td>
</tr>
<tr>
<td>Effective</td>
<td>19.50 0.35</td>
</tr>
<tr>
<td>Dominant</td>
<td>25.00 0.32</td>
</tr>
<tr>
<td>Non-verbal</td>
<td>33.00 0.03 *</td>
</tr>
</tbody>
</table>

* p<.05
Question 14 results, detailed in Table 3.5 show that 91% of courses used role plays between EPITs, feedback on these role plays, and presented a range of problem-solving approaches to their EPITs, 82% of course tutors also reported using follow-up readings and lecture input, 73% of tutors stated that they used pre-readings and follow-up placement exercises, 64% of courses used some form of tutor demonstration, 55% used video or audio tape analysis of role plays, and less than half (46%) taught one framework in detail to their EPITs. Finally only 27% of training courses show EPIT's a video of an educational psychologist using a problem-solving approach.

Of these teaching approaches respondents rated the use of follow-up placement exercises and the teaching of one problem-solving framework in detail as being most effective. The use of role plays between EPITs, giving feedback on these role plays, lecture input, tutor demonstration, watching a video of an EPIT using a problem-solving framework, and presenting a range of frameworks, were all seen as being somewhat effective. The use of pre-readings and follow-up readings were seen by respondents as being of more limited value.

Questions 17 and 18 results, detailed in Table 3.6, show that 100% of course tutors viewed problem-solving skills as being very important to the work of an educational psychologist. Similarly, 100% of tutors viewed their course as doing a good job in teaching such skills to its EPITs.

Question 20 results, presented in Table 3.7, indicate that 100% of course tutors stated that they taught the following problem-solving steps: define and clarify the problem situation, analyse the forces affecting the problem situation, collect information on the priority issues, identify probable factors contributing to the priority issues, jointly plan an intervention with the client, support the client in implementing the intervention, and evaluate the effectiveness of actions undertaken and where necessary recycle through the problem-solving steps. Ninety-two per cent of courses also taught the importance of encouraging the client to select the priority problem, and to work with the client to specify a desired goal or outcome of intervention. All of the problem-solving steps outlined were seen as being very important to successful problem solving.
Question 21. Table 3.8 shows that, of the Big-5 factors, *Agreeableness*, *Conscientiousness* and *Openness* were all seen as being very important, whilst *Extroversion* was seen as being a slightly less important personality characteristic for a successful problem solver. *Neuroticism* was seen as not being an important characteristic to have. Of the three Norton factors, *Effective* and *Non-verbal* features were seen as being very important to a successful problem solver, whilst *Dominant* features were seen as not being important. Table 3.9 shows that tutors perceived *Non-verbal* aspects as being significantly more relevant to successful interviewing than to successful problem solving. On all the other features there were no significant differences observed.

### 3.4. DISCUSSION

"*Filling in your questionnaire has really made me think about ways of improving what we do on our course up here!*" (Respondent 10)

"*Not everyone constructs a curriculum in the same way - we would certainly not relate problem solving to interviewing at all!*" (Respondent 8)

It is important to consider the weight that should be attached to these findings before discussing the main results of this study. The very high response rate (i.e. 13 out of the 14 possible training courses responded) meant that the sample covered tutor views from 93% of training courses in England, Wales and Northern Ireland. Even with such a large response rate the sample is still relatively small. The question of relevance here is "do the results of this postal questionnaire provide a sound basis upon which to make generalisations about the training courses surveyed?".

#### 3.4.1. Interviewing

The responses to Section One of Questionnaire A (IPS) confirmed the view outlined in chapter two regarding the importance that interviewing skills have within the training curriculum for educational psychologists. Interviewing skills were seen as being a core
skill in supporting educational psychology practice. All courses indicated that they taught such skills, with the majority of tutors perceiving that they were doing "a more than adequate job" in preparing their EPITs for the task of interviewing teachers.

Despite the importance attached to interviewing, most courses reported spending no more than 9 hours covering such skills during the training year. It could well be the case that further hours of interview theory and practice are added whilst EPITs are on placement. Unfortunately, this is an assumption, as we do not have any data outlining exactly what work, and in what proportions, and to what degree of competency EPITs undertake whilst on placements. This suggests that any interpretation of responses to Question 1 needs to be undertaken with caution and is acknowledged as a limitation of this research.

Within the constraints imposed by one-year training, most courses have opted to present a range of interviewing frameworks, with just over 50% also teaching one of these approaches in greater detail. To teach EPITs interviewing approaches, the majority of courses provide tutor demonstrations of interview techniques, including some lecture input, and in 69% of courses they also provide critiques of EPIT with EPIT role plays. In Carroll's (1974) research only 22% of courses used EPIT-EPIT role plays. Over the past 25 years little appears to have altered in the proportion of courses providing lecture input, with 67% reporting its use in Carroll's research and 69% in this study. Follow-up placement exercises are mentioned by about 70% of courses, presumably to consolidate and extend skills demonstrated and practised at university. In Carroll's research 89% of courses mentioned that EPITs' interviewing skills were rated whilst on placement.

It is beyond the scope of this section to present a detailed discussion regarding the issues around competency-based research. For the purposes of this section, there is research which indicates that, if the aim of training is to develop skills to competency level, then detailed regular practice and feedback within a meaningful context (structured micro-teaching sessions using realistic content and settings) can assist people to integrate skills and knowledge (Eraut, 1994, 1998; Ormrod, 1998; Woolfolk, 1998). Those courses which taught one interview framework in detail perceived it to be a more effective strategy than those who just presented a range of frameworks to their EPITs.

There was a great degree of consistency between the various training courses in
the interview strategies being taught. This was to some extent surprising given that the common curriculum for courses, as outlined by the BPS, is more descriptive than prescriptive, and states that"...each course brings its own orientation and specialisms to training..."(1999, p.1). Perhaps the great degree of similarity between courses is due to the pervasive influence of cognitive-behavioural models of interviewing within educational psychology practice. Or it could be an artefact of using a structured question format in the survey which influenced responses (Egan, 1994; Haley, 1976; Woolfe & Dryden, 1996).

All the courses taught open questioning, active listening, paraphrasing, reflecting back client content, and non-verbal communications. It was assumed that this last feature would include positive eye contact, facial expressions, and other signs of attentiveness and interest from the interviewer. The majority of courses taught the importance of planning a structure before the interview, and the use of closed questions, sharing your views with the client, reflecting back to the client their feelings, interpreting information, developing hypotheses, framing questions to test these hypotheses, checking with the client on the accuracy of such hypotheses, and goal setting with the client. All of these strategies were seen as being important to successful interviewing, except closed questions, giving advice and suggestions, and confronting or challenging a client, which were all seen as being less helpful.

The information collected on the types of personality and communication characteristics of successful interviewers were not unexpected. An effective interviewer was seen as scoring highly on Agreeableness, Conscientiousness, Extroversion, and Openness, with Neuroticism being seen as not important. These features seem to make logical sense, if establishing a positive relationship with a teacher is seen as being important. Whether they are also related to the interviewer's ability to reach a high quality understanding of the teacher's problem situation is not so clear.

3.4.2. Problem solving
The responses to Section Two of IPS confirmed the importance placed upon problem solving within the training curriculum for educational psychologists, with problem solving being seen as "very important" by all tutors surveyed. All courses taught such
skills, with the majority of tutors perceiving that they were doing a "more than adequate job" in preparing EPITs to problem solve with teachers. Due to difficulties with one of the question formats, all that can be concluded was that most courses spend more than 9 hours covering such skills. This is not particularly illuminating and reflects a weakness in the construction of the question.

Within the constraints imposed on courses by one-year training, most programmes had opted to present a range of problem-solving frameworks, with less than half (46%) also teaching one of these in much greater detail. To teach their EPIT's problem solving the majority of courses provided EPIT to EPIT role play exercises, with tutor feedback, with some video/audio analysis of role plays, lecture input, including some tutor demonstrations, pre-lecture and follow-up readings. Follow-up placement exercises were mentioned by about 73% of courses, presumably to consolidate and extend skills demonstrated and practised in class. Unfortunately comparisons with Caroll's study are not possible as he did not collect any data on problem-solving. Perhaps this reflects the growing importance placed upon problem solving over the past 25 years or so.

Research quoted earlier has shown that teaching one framework in detail, within a micro-teaching context, can greatly enhance the development of competency (Eraut, 1994, 1998). The present study showed that courses which taught one problem-solving framework in detail, only rated it as being slightly more effective than courses which had presented a range of approaches. Given the constraints of one-year training, perhaps those courses which teach a range of approaches do not expect the same level of competency as those courses which teach one framework in detail. Presumably such courses would have greater expectations that the increased level of input would result in greater demonstrations of competency.

Results showed a great degree of consistency between the various training courses in terms of the problem-solving steps taught. All courses reported following all of the 9-steps mentioned on the questionnaire schedule, except for one course who did not teach EPITs to "encourage the client to select a priority issue, and specify a desired goal".

Results within this section need to be interpreted with some caution. A social
desirability effect could well have been operating. When course tutors were presented with a list of steps, processes, and teaching strategies they may not have wanted to present their course as being less rigorous or thorough than any other. In some cases tutors may have not wanted to appear "old fashioned" if they did not identify the use of technology in supporting their teaching. With hindsight, one way to have reduced the influence of any social desirability effects, would have been to simply ask tutors to list the steps which made up their interviewing and problem-solving approaches, and the teaching strategies used (i.e. using a semi-structured questionnaire format, Cohen & Manion, 1980).

3.4.3. Relationship to theoretical models of interviewing and problem solving

The interview strategies which training courses report that they are teaching are common to most cognitive-behavioural problem-solving approaches (Monsen et al, 1998) and some counselling models, such as Egan's problem-management approach (1994). The use of these strategies suggests that course tutors perceive that the task of interviewing a teacher is a problem-solving activity. On the basis of these results training courses see the interviewer's role as assisting a teacher to move through a series of steps, with problem clarification, goal setting, and intervention planning, implementation and evaluation, being core components. In using such a sequence to guide interviewer behaviour, it presupposes that latter steps within this process are based upon an adequate identification and understanding of the teacher's presenting problem situation by the interviewer.

The main emphasis of this thesis is on examining the relationship between selected interviewer behaviours and the task of gaining this understanding. The task involves finding out what the teacher's perceptions of the problem are, jointly evaluating it, and where necessary challenging the efficacy of it, so that an effective intervention can be planned and implemented. To achieve such an understanding it is proposed that the interviewer needs to develop his or her own understanding of the teacher's problem. Almost 100% of course tutors, given the reservations noted earlier, stated that they taught the 9 generic problem-solving steps as outlined in question 20 of questionnaire. All were unanimous that these steps were very important to successful problem solving.
The first step involves defining and clarifying the teacher's presenting problem. Through a series of supplementary questions, the interviewer tries to discover the teacher's view of the problem and identify the factors which might affect the problem, deciding whether there is a priority problem, and if so what factors are affecting it. During the first steps of the problem-solving cycle, open questions, active listening, and paraphrasing strategies would be used to obtain an accurate overview of the teacher's presenting problem and any subproblems. Through this process, the interviewer may develop a view of the problem which is different to that of the teachers. Strategies such as developing hypotheses, framing questions to test hypotheses, checking their accuracy with the teacher, and sharing reasoning with the teacher, along with challenging and confronting of views, would be used to develop an understanding, and resolve any logical differences. In later steps emphasis would be placed upon goal setting with further information being obtained on the factors affecting the implementation of any intervention (Egan, 1994; Robinson & Halliday 1987, 1988).

An interviewer who presents a slightly different view, or challenges a teacher's understanding, must logically have judged that the teacher's perceptions were inadequate in some specific ways. The standard applied to judging the adequacy of a teacher's views is the interviewer's own understanding of the teacher's problem. Yet how has this understanding been reached, and how do we know that the interviewer's understanding is any more accurate and complete than that of the teacher? Despite the fact that it is the interviewer's understanding which is used to judge the adequacy of the teacher's understanding, little guidance is given in problem-solving approaches on exactly how an interviewer reaches such an understanding (Robinson & Halliday, 1987).

The results indicate that 100% of the training courses surveyed teach hypothesis-based interview/problem-solving frameworks. To support such approaches, the use of accessible reasoning (though not called this by courses), that is the interviewer making their thinking about the problem explicit to the teacher, is taught in about 85% of courses. These results reflect what courses "espouse" they are teaching. This study does not provide any evidence to address the central question of whether such approaches actually are effective in helping an interviewer gain an accurate high quality understanding of a teacher's problem.
Another view is that as long as an EPIT actively listens and attends to the teacher (by asking open questions, closed questions, summarising, reflecting back and paraphrasing), he or she will automatically reach an understanding of the teacher's problem situation. The real issue is not whether an understanding is developed, but whether such an understanding is of a high quality. There is an underlying assumption that an intervention based upon a high quality understanding will be more effective than one which is not.

3.5. LIMITATIONS OF STUDY ONE

Cohen and Manion (1980) report that the postal questionnaire survey is one of the most commonly used descriptive research methods. Typically, surveys gather data at a particular point in time with the purpose of "a. describing the nature of existing conditions, or, b. identifying standards against which existing conditions can be compared, or c. determining the relationships that exist between specific events" (p.71).

In this study the IPS Questionnaire was designed so that data could be collected describing the views of course tutors on aspects of interviewing and problem solving (purpose "a" in Cohen and Manion's terms).

In critiquing study one, the following question unifies this section, "In drawing conclusions and making generalisations about the training courses surveyed, what weight can be placed upon the results?". In discussing the usefulness of the data via the postal questionnaire a range of issues will be highlighted which caste real doubt on the reliability, validity and ultimately the generalisation of the main results obtained.

3.5.1. Questionnaire design and construction

"I would include a big section in your methodology on the problems of using structured questionnaires to do research on complex social phenomena!" (Respondent 8)

Missing data or non responding affects all forms of questionnaire research. A survey of this type, with relatively small numbers, is much more influenced by these effects. The
design of the questionnaire and the construction of its questions becomes an important factor in the efficacy of such small scale surveys.

The first phase in the design of this questionnaire was a decision on its purpose and focus. In study one the general purpose was "to investigate course tutors' views on aspects of interviewing and problem solving". This was seen as being important in terms of providing contextual information for subsequent studies detailed in this thesis. The next phase involved deciding upon the specific primary objectives of the survey. This involved identifying and itemising a list of subsidiary topics that related back to this general purpose, based upon past research, logic and researcher questions. Once topics were identified then specific questions were constructed, piloted (on a small sample of only four tutors who were not involved in the final survey), and then the final questionnaire was sent out. On hindsight and for future reference there were several important topic omissions, and several examples of inadequate question construction which may have increased the non responding phenomenon.

3.5.1.1. Topic omissions and inadequate question construction

"I've tried my best but struggled with some of the terms presented and/or their definitions" (Respondent 6, referring to the personality descriptors)

"Some of these facets are just impossible to respond to" (Respondent 14, referring to the personality descriptors)

The questionnaire did not ask any specific questions about EPIT placements, as they related to supporting and developing interviewing and problem-solving skills. There was only a brief reference made to placements in questions 3 (k) and 14 (k). It would have been helpful in building up a more complete picture if information on this area had been collected. This is relevant given that a third of the training year is involved in placement activities. Carroll's (1974) study reported that placement supervisors would be asked to rate trainee interviewing competence. The present study does not extend our knowledge any further, and this is an important omission.
Most tutors did not respond to the more open-ended type of questions (i.e. 4, 5, 8, 15, 16, 19 and 23). Because of the very low response rates to these questions they were not coded. Perhaps the majority of tutors did not respond because they saw these questions as being too time consuming to answer, as repeating material covered in other questions where they could indicate their preferences (via tick boxes). This may have been more true for questions 4 and 15 which asked tutors to outline their interviewing and problem solving approaches. Though the final return rate was very high, it did take a lot of prompting and persistence to achieve. This could well support the view that fatigue and time were important considerations for tutors in deciding to complete or not complete questions. If they did feel compelled to complete the questionnaire, then ticking boxes was more time effective than responding in detail to open-ended questions.

The questions, particularly 4 and 15, assumed that tutors were able to make explicit the detail of the interviewing and problem-solving frameworks they used. This is an assumption, given some limited support by tutors' comments written in the margin of questionnaires, "can't answer this question as problem solving underpins everything we do", and "this list has given me some ideas for improving our course". As outlined before the use of a less structured format might have resulted in different data being collected. The use of semi-structured face to face interviews would have been another approach. But this too has its own difficulties (labour intensive, prone to social desirability effects).

Questions 11 and 22 used a more structured format, yet they were also not answered by the majority of tutors. These questions were included to provide a cross check with questions 10 and 21 respectively. Questions 10 and 21 presented the five personality and three communication style descriptors, and asked tutors to rate how important each factor was to either successful interviewing or problem solving. In contrast these questions were answered by the majority of tutors. Questions 11 and 22 presented, in random order, the individual descriptor words which were used to define the personality and communication style characteristics (e.g., the characteristic of conscientiousness was defined by competence, order, dutifulness, achievement-striving, self-disciplined, deliberation). The style and format of these sections were modelled upon work by Costa and McCrae (1989, 1992). Their research was largely conducted
within the United States of America, and not with British populations. There are potentially significant cultural differences which could have affected response rates.

Few tutors responded to these questions (i.e. 10, 11, 21 & 22) and as a result they were not coded. Some indication of why they were not responded to, in addition to those noted earlier, is suggested from comments written in the margin of questionnaires, for example "these are not in keeping with our philosophy", "we don't think like this", "these are too psycho-dynamic", "don't know what you mean". On hindsight and for future reference more work was needed in clarifying the purpose of such questions and, if used, then piloting formats that would increase the likelihood of appealing to a discerning and critical audience of educational psychology tutors.

Finally, questions 1, 2 and 12, 13 asked course tutors whether they taught interviewing and problem solving respectively and, if so, how many hours were involved. Unfortunately, 58% of tutors who responded "other" did not then provide the exact number of hours (as requested to do so). This limited the usefulness of the results of this question. With hindsight this question could have left tutors to fill in the number of hours, with the responses being coded by the researcher.

3.5.2. Possible biasing effects

"You seem to assume a behavioural framework throughout - is this justified or adequate?" (Respondent 8)

"We don't teach it like this far too psychodynamic!" (Respondent 4)

Leedy (1980) observes that the questionnaire survey is "particularly susceptible to distortions through the introduction of bias" (p.99). This bias is often subtle, and may present itself through the types of questions asked, and how they are worded. For example, question 4, "What interviewing approach (es) do you teach on your course? (if appropriate, can you outline the steps in the approach (es) and/or include supporting material)" - however clear the wording and intent of this question may appear it makes at least two assumptions. Firstly, it assumes that interviewing is taught in a structured
sequenced way on a course. Secondly, it assumes that the tutor is able to clearly identify and articulate the component parts of a given framework(s).

Despite a statement of confidentiality all tutors knew that their questionnaires were going to be read and analysed at another training course. It is possible that social desirability effects could have potentially affected the validity of some of the responses. Questions, such as the one highlighted above, could have prompted some tutors to respond in ways which they perceived to be what the researcher was looking for, or in ways which were seen as being more desirable or appropriate (e.g., some tutors may have responded so as not to appear "out of touch" with recent developments in the field of problem solving and interviewing, or "old fashioned" regarding the use of technology in supporting training). Collectively these various factors could have limited the validity, reliability and ultimately the weight given to the findings.

3.6. CONCLUSIONS

At an uncritical and surface level study one indicates that the tutors who were responsible for co-ordinating and teaching interviewing and problem solving perceive these to be core skills to educational psychology practice. It was concluded that the data showed that the majority of course tutors in England, Wales and Northern Ireland claimed to teach an hypothesis-testing framework to guide interviewing and problem solving. All tutors rated interviewing and problem solving skills to be very important to the work of educational psychologists. In addition the majority of tutors reported that they taught accessible reasoning (or semantic variants of it) to the EPITs on their courses.

With reference to the conceptual review outlined in chapter two it was optimistically assumed that the majority of courses surveyed were teaching both the various component strategies involved in successful interviewing and the cognitive strategies aimed at facilitating interviewer understanding. It was further assumed that tutors perceived that the complex task of deriving meaning from an initial teacher interview was more than just a matter of how to communicate, but also how to understand the teacher's problem so that the interviewer can know what to communicate to the teacher. It was proposed in chapter two that an important goal of initial teacher
interviews is to reach a high quality understanding of the teacher's problem situation. This task requires considerable cognitive as well and communicative skill. It was concluded that the majority of training courses in England, Wales and Northern Ireland show at an espoused level an adherence to a process framework which not only describes the component skills, but also provides an explanation of the cognitive processes contributing to an understanding of teachers' problem situations. Within the limited time available during one-year training programmes, courses perceive that they are doing a "more than adequate" job of preparing EPITs for such activities.

Unfortunately study one does not provide evidence as to whether or not this is actually so, or that it is not so and as previous sections have outlined there are real concerns about the reliability and validity of the data collected. As a way of addressing some of these concerns study three (described in chapter seven) returns to a sub-sample of the course tutors who were involved in study one. However, this time a series of semi-structured face-to-face interviews is undertaken to explore and investigate their reactions to some of the main findings from the thesis as a whole.

Study three represents an attempt to move beyond the limitations imposed by the use of a postal questionnaire and provides a useful way of concluding this thesis by presenting a careful analysis of course tutors reactions to some of its main findings. This is important given the complexity of the assumptions made about course tutors understanding of hypothesis-testing, accessible reasoning and the potential challenges to the ways interviewing and problem solving are conceptualised and taught to EPITs in England, Wales and Northern Ireland.

3.6.1. Final reflections

Study one used a standardised postal questionnaire with predominately closed questions to obtain the views and reactions of course tutors to a range of issues focused on the conceptualisation, content and teaching of interviewing and problem solving skills. One of the main limitations of using standardised questionnaire surveys is that the areas of interest are predetermined by the researcher who relies upon the anonymous reports of respondents. Study one did not attempt to triangulate or explore in depth its findings by directly approaching course tutors and seeking their views and opinions or indeed their
accounts of what were important considerations when teaching EPITs interviewing and problem solving skills.

The exceptionally high return rate could well have reflected course tutors concern "to do a fellow tutor a favour" but because of constraints of time and social desirability factors they filled the questionnaire in, perhaps quickly tending to leave out those questions which required a greater degree of input, self disclosure, reflection and thought. However, there was no way to collaborate whether, at a theory-in-use level, courses actually did the things they reported that they were doing. It may also be the case that the course tutors did not actually understand some of the key concepts and ideas covered within the questionnaire. Yet the current researcher in their conclusions took the results at face value assuming a shared understanding of key concepts and generalising, for example that "sharing one's thinking aloud" was in fact thought of as being the same thing as the complex concept of accessible reasoning. The picture which emerged was an optimistic but uncritical one.

On hindsight these are real weaknesses to the validity of the conclusions derived from study one. It would have been more illuminating, in terms of providing other perspectives and a much richer picture of course tutor views if follow-up interviews had also been conducted alongside the more "objective measures" used (Miller, 1996, p.77). As has already been mentioned some of these issues will be dealt with in study three.

Any claim that study one represents the definitive word on course tutors views on interviewing and problem solving and the role of accessible reasoning in the development of problem understanding is unfounded. The previous sections have highlighted a number of significant reservations which cast real doubt on the reliability and validity of the data collected. Taken together such concerns support the view that study one was rather a weak study, in the sense that questions are raised about the meaningfulness and thus usefulness of the data collected.

3.6.2. The next investigation

Study one highlights what course tutors say they are doing at an espoused level with regard to interviewing and problem solving. But how do we know that their views are reflected in actual practice? The next chapter will detail a study which investigated
elements of actual practice (theory-in-use) in one of the courses surveyed. Study two is a longitudinal experimental study designed to investigate the development and relationship of selected interviewer behaviours to the attainment of a high quality understanding of a teacher’s problem, in a group of EPITs in training.
CHAPTER FOUR

STUDY TWO: A longitudinal experimental investigation into the development and relationship of selected interviewer behaviours to problem-analysis quality in a group of educational psychologists in training (EPITs)

4.1. RATIONALE FOR STUDY TWO

Most of the problem situations with which educational psychologists work are complex enough to allow support for a wide variety of possible analyses (Arkes, 1981). As a result, there are theoretical and practical questions, which arise about the quality of an educational psychologist's analysis of a client's problem, and about the interview strategies, which are related to gaining such an understanding. Study two investigates theoretical predictions regarding how people go about formulating high quality understandings of complex and ill-defined problems, and how interviewer skills develop over time following a period of training.

For the purposes of this thesis, a "high quality" understanding was defined using Robinson's (1987) definition as, an analysis which was: 1. Accurate to the facts of the case; 2. Complete, in that all major aspects of the client's problem, and their inter-relationships, were identified; 3. Consistent with contemporary psychological theory and practice; and 4. In agreement with "expert" analysis. The results of this study should also help to inform the content and approach taken when teaching initial interviewing and problem-reasoning skills in training programmes for educational psychologists (and other related practitioners, such as clinical psychologists, social workers and counsellors) where the purpose of such interviews is reaching an accurate and high quality understanding of a client's problem.

Chapter two highlighted a body of literature which has attempted to identify interviewer behaviours involved when practitioners make judgements about a client's presenting problems. This is often called the diagnosis phase within the medical and clinical literature. Surprisingly, there has been little published research, which has directly investigated the relative quality of such understandings. Much of the research
has instead focused upon the construction and validation of a wide range of process models concerning the mechanisms underlying the way in which doctors (Elstein et al, 1990), counsellors (Egan, 1994; Lichtenberg, 1997; Tomm, 1985), and educational psychologists (Cameron & Stratford, 1987; Gutkin & Curtis, 1982; Miller et al, 1992) select, organise and integrate information from their patients or clients in order to derive an analysis of their problem. It is assumed that, if a practitioner follows a set of logical or theoretically derived stages, and uses particular types of questions, they will obtain an adequate picture of the client's problem. There have been few attempts to study systematically the development over time of those interviewer behaviours which are related to higher quality judgements (or the opposite, poor quality analyses), in either the medical or social science arenas (Robinson & Halliday, 1988).

In the following study, the educational psychologist who is engaging in an initial teacher interview is seen very much within Deweyian terms. The interviewer is actively involved in a joint inquiry with the teacher; in generating hypotheses, testing such hypotheses against teacher information and their own knowledge and experiences, critiquing and agreeing propositions, with the aim of achieving an accurate understanding of the problem situation. This view is derived from research and models on problem reasoning (Argyris, 1982, 1993; Argyris & Schön, 1974, 1996; Elstein et al, 1990; Eysenck & Keane, 1995; Popper, 1989; Robinson, 1987; 1993; Robinson & Halliday, 1988; Schön, 1983), and related research from the fields of information processing and cognitive psychology (Arkes, 1981; Eysenck & Keane, 1995; Glaser, 1984; Nagy, 1994; Ericsson & Charness, 1994; Ericsson & Lehmann, 1996; Dawson, 1998; Wiley, 1998).

Such research indicates that, due to human information processing limitations, especially working memory constraints, a search to find out everything about a case would lead to cognitive overload on the part of the educational psychologist, and increased difficulty in observing and sorting patterns and relationships with the information provided by the teacher (Kail & Pellegrino, 1985). It is therefore proposed that, during initial interviews, the way that teacher information is sampled and processed is of crucial importance to the development of a quality understanding of the problem by the interviewer.

Some of the strategies involved in the analysis of clients' problems are derived
from research which has looked at how people reason and problem solve within complex knowledge domains, such as medicine (Elstein et al, 1990). Expert problem-solvers are distinguished from novices by their use of theory and principle to guide and integrate what initially seem to be unrelated aspects of the problem, the generation of additional information from the detail given by clients, and the making of predictions (Chi et al, 1981; Glaser, 1984; Lichtenberg, 1997). Expert problem solvers appear to reason with the facts of the case, and make interpretations and predictions based upon these facts. On the other hand novices appear to remain focused upon the surface features of the case, spending considerable amounts of time collecting as much data as possible from clients, usually on arbitrary aspects of the problem (Claiborn, 1982).

4.1.1. Psychological interviewing

Many models of psychological interviewing have been influenced by the counselling literature (Edenborough, 1996; Woolfe & Dryden, 1996). Often these models are based upon philosophical, rather than empirical claims, about how people reason about and understand a client's problem, if, in fact, that is what they see a counsellor's role as being (Dryden, 1996; Woolfe & Dryden, 1996). In general, those models which stress some notion of understanding of a client's problem, emphasise that what is important during the interview is for the interviewer to empathise (positive regard, acceptance, warmth, adopting a non-judgemental stance), and to ask many enquiry (open and closed) questions in order to obtain as much information about the client's problem as possible (Tomm, 1985; Woolfe & Dryden, 1996).

At a common sense level this model suggests that, to understand a client's problem, counsellors must find out all they can. The information obtained is then processed, within particular theoretical frameworks, with the client in most cases being excluded from the counsellor's reasoning process (e.g., variants of behavioural, cognitive-behavioural, systemic, psychodynamic approaches, and what some writers refer to as eclectic models, or in Greeno's terms, behaviourist, cognitive and situative perspectives, Greeno et al, 1996). In fact, some models of counselling tell counsellors not to share their views with clients, as this could interfere with the therapeutic process (i.e. in frameworks which use, for example the techniques of paradox and metaphor) (Woolfe
Lee, Uhlemann and Haase (1985) found in a study of beginning counsellors that 86% of the trainee counsellors' behaviour was comprised of reflection, information gathering and giving advice. Less than 1.2% was comprised of interpretation and confrontation. The rationale for asking enquiry questions (open and closed) is that they provide the only means for the interviewer to access information from the client about their problem. The information obtained is sorted and reasoned with covertly by the interviewer. The counsellor does not need to share their thinking with the client, because they are the "expert" who needs to understand the problem so that an intervention can be designed for the client. However, a reliance upon enquiry questions does nothing to assist the problems imposed by the limits of human information processing. In addition, such an approach does not allow opportunities for the client to critique or challenge the counsellor's view (hypotheses) about their problem situation. This last proposition assumes that both the counsellor and the client have the skills to do this, and also implies relatively assertive and sophisticated clients.

4.1.2. Accessible reasoning - a part replication and extension of Robinson and Halliday's findings

Educational psychologists usually attempt to reach an understanding of a teacher's problem situation by interviewing them. This highlights the question of what behaviours assist the interviewer in overcoming the cognitive difficulties associated with ill-structured problems, so that a high quality understanding of the problem can be reached. Robinson and Halliday's (1988) research identified that interviewers' use of "accessible reasoning" appeared to be an important strategy related to gaining such an understanding. Interviewer overt reasoning was termed "accessible" because it provided the client with access to the thinking, which lay behind the interviewer's developing model of their problem. For the purposes of this thesis, accessible reasoning was defined, as, any interviewer utterance, which expressed an understanding or interpretation of some aspect of the client's data, supported by relevant evidence or argument.

As described in chapter two, Robinson and Halliday (1988) found that the amount of information collected during an initial interview with a client did not predict the
quality of counsellors' analysis of the problem. This finding is consistent with other research, which has shown that expert problem-solvers, in comparison with novices, did not collect as much information from their clients in formulating hypotheses or in reaching their analyses (Lichtenberg, 1997; Locke & Covell, 1997; Rosenberg, 1997).

It is acknowledged that much of the interviewer's reasoning during the interview is covert rather than overt. On theoretical grounds, it was assumed that overt and covert reasoning would be highly related. The variable use of accessible reasoning may make a difference because it mirrors the extent to which the interviewer is reasoning covertly (Halliday, 1985). In study two it was hypothesised that accessible reasoning makes additional contributions to problem understanding because it is accessible, and therefore open to external critique by the teacher (Argyris, 1982, 1993).

Interviewers who test their hypotheses covertly could miss valuable opportunities of having the teacher validate or challenge their understandings. The teacher may withhold relevant information and not share their perceptions of the problem with the interviewer. It is likely, that when interviewer reasoning is made accessible, the teacher is provided with opportunities to assist the interviewers in developing their understanding. As a result it is likely to be more accurate and more complete (Glaser, 1984; Lichtenberg, 1997; Locke & Covell, 1997).

In the following study, it was hypothesised that by the end of the training year EPIT's would be sharing more of their reasoning out loud with the teacher (because, they had been systematically taught to do so), and that their subsequent problem analyses would be of a higher quality than at the start of training. This process is obviously dependent upon the interviewers having sufficient content-guides (schemata). This would include EPITs' experiences, knowledge of psychological theory and research which were relevant to the range of problems that they were presented with during training (Goodyear, 1997). As part of their training EPITs were indeed presented with a range of content and experience on the kinds of problems educational psychologists typically work with. The simulation task embodied some of these features into a "typical case".

The use of accessible reasoning may also result in the teacher positively reframing his or her problem. Ravenette's (1997) work, within personal construct
psychology, would predict that a client's presenting problem is in part a function of the way they have constructed and reasoned about their life events. If interviewers disclose their own understanding (interpretations and predictions) of the problem, clients are provided with an opportunity to compare and contrast it with their own thinking, and have an opportunity to revise their own beliefs. This does of course assume a degree of rationality on the part of both the client and interviewer (Argyris, 1982).

In the types of problems presented to educational psychologists, a high quality understanding is not the same as a correct diagnosis as in the medical arena. In information-processing terms, reaching an understanding of a teacher's ill-structured problem means changing it into a series of more clearly structured subproblems. In the following study the quality of an EPIT's problem understanding, including its accuracy, completeness, and the coherence of its argument, were the major outcome measures used.

The present study represents a part replication and extension of Robinson and Halliday's (1988) correlational study. Study two investigates their finding on accessible reasoning within a longitudinal experimental study. The study was interested in the extent to which EPITs, in trying to understand a teacher's problem, use accessible reasoning (and other strategies) during initial interviews, and whether so doing is related to a higher quality understanding. This proposition was tested prior to training (time 1), and near the completion of training (time 2). The EPITs studied were taught an hypothesis-testing problem-solving framework and other related skills (problem-analysis, Monsen et al, 1998). As a consequence this study will also provide an evaluation of the effectiveness of the course in teaching these skills.

4.2. AIMS OF STUDY TWO

In summary, the basic aims of this longitudinal experimental study were to answer questions concerning how EPITs go about the task of understanding ill-defined real-life problems, and to investigate Robinson and Halliday's (1988) finding regarding the role played by accessible reasoning in this process. To do this the relationship and development between the use by EPITs of open and closed questions, number of interviewer utterances, and accessible reasoning statements, and the quality of their
written problem analyses were studied.

4.2.1. Research hypotheses for study two, time 1

4.2.1.1. Perceptions of the interview task
The main research question was:
1. How do EPITs perceive the interview task?

The specific hypotheses were:

1.1. That there would be no significant difference between EPITs and controls in their perceptions of the interview task, with both groups seeing the task as convincing, difficult and unfamiliar;

1.2. That the simulation task would provide a valid means of assessing problem understanding.

4.2.1.2. Perceptions of their problem-analysis quality
The main research question was:
2. How do EPITs rate the quality of their problem analyses?

The specific hypothesis was:

2.1. That there would be no significant difference between EPITs and controls in their self-ratings of their written problem analysis quality prior to the start of EPIT training.

4.2.1.3. Quality of problem understanding
The main research question was:
3. At the start of training, what would be the quality of problem understanding produced by EPITs and controls?

The specific hypothesis was:
3.1. That at time 1 there would be no significant difference between EPITs and controls in the quality of their written problem analyses, with both groups obtaining overall below average ratings.

4.2.1.4. Relationship between selected interviewer behaviours and quality of problem understanding

The main research question was:

4. During an initial teacher interview, is it the frequency of open or closed questioning, the amount of interviewer utterances, or the use of accessible reasoning, that best predicts the achievement of a higher quality understanding of a teacher's presenting problem?

The specific hypotheses were:

4.1. That there would be no significant difference between EPITs and controls in their use of open and closed questions, amount of talk, and of accessible reasoning, at the start of EPIT training, with both groups using more closed than open questions, having similar frequencies of talk, and low levels of accessible reasoning statements;

4.2. That at time 1 there would be no significant relationships between the four-selected interviewer behaviours and the quality of problem understanding.

4.2.2. Research hypotheses for study two, time 2

4.2.2.1. Perceptions of the interview task

The main research question was:

1. How do EPITs perceive the interview task?

The specific hypothesis was:

1.1. That there would be a significant difference between EPITs and controls in their perceptions of the interview task by the end of training, with EPITs perceiving
the task as being more familiar and less difficult.

4.2.2.2. Perceptions of their problem-analysis quality

The main research question was:

2. How do EPITs rate the quality of their problem analyses?

The specific hypothesis was:

2.1. that there would be a significant difference between EPITs and controls in their self-ratings of their problem-analysis quality by the end of training, with the EPIT groups ratings being more closely related to their actual scores.

4.2.2.3. Quality of problem understanding

The main research question was:

3. After a period of training in which interviewing and problem-analysis skills are taught, do EPITs produce higher quality analyses of a teacher's problem?

The specific hypotheses were:

3.1. That there would be a significant difference between EPITs and controls in the quality of their written problem-analyses, with EPITs obtaining significantly higher overall ratings than the control group at the end of training;

3.2. That the nine problem-analysis subscales would correlate highly with the overall quality score, thus supporting the use of the total score in analyses;

3.3. That the nine problem-analysis subscales would correlate highly with each other, therefore supporting the view that the problem-analysis measure (based upon Robinson and Halliday's (1988) work) provides a valid means of assessing problem understanding.
4.2.2.4. Relationship between selected interviewer behaviours and quality of problem understanding

The main research question was:

4. How does EPITs' use of open and closed questioning, amount of talk, and accessible reasoning change during the course of training, and are these changes related to improved problem-analysis quality?

The specific hypotheses were:

4.1. That at the completion of training EPITs' use of open questions would be significantly higher than at the start of training. Controls' use of open questions would remain unchanged (Tomm, 1985);

4.2. That at the completion of training EPITs' use of closed questions would be significantly lower than at the start of training. Controls' use of closed questions would remain unchanged (Tomm, 1985);

4.3. That at the completion of training the number of EPIT utterances would be significantly lower than at the start of training. Controls' number of utterances would remain unchanged;

4.4. That there would be a significant difference between EPITs and controls in their use of accessible reasoning statements, with EPITs using significantly higher percentages of accessible reasoning statements than the control group during interviews at the end of training;

4.5. That the frequency of open and closed questions and the amount of interviewer utterances would contribute little to the explanation of the quality of written problem analyses in both the EPIT and control groups;

4.6. That a significant amount of the variance in written problem-analysis quality would be related to the frequency of EPITs' use of accessible reasoning during the
course of initial interviews conducted at the end of training.

4.3. METHOD

4.3.1. General design and interviewing tasks
A longitudinal study was chosen as this approach was considered essential to the examination of change and development in response to learning opportunities in interviewing and problem-solving skills. Longitudinal studies have been criticised on the grounds of inherent sampling weaknesses, because they normally have small sample sizes, and complete data may be impossible to gather as subjects may drop out due to a variety of reasons. As a result they tend to be more time consuming than studies conducted on the basis of a one-off or cross-sectional research design. However, this approach is invaluable if you want to obtain information about the change that takes place in EPITs' skills, together with interrelated factors that may affect development at different stages (Van Dalen, 1973).

The relationship and development of open and closed questioning, number of utterances, and accessible reasoning to written problem-analysis quality was assessed using two initial interviewing tasks conducted nine months apart. The interview situations were designed to be typical of the type of case with which a qualified educational psychologist would be expected to be involved. Each participant undertook the initial interviews as if they were a fully qualified educational psychologist. The use of a standard case controlled for variation between participants, both within the interview situation itself and over time. Two female actors were employed, one played the role of the Junior Schoolteacher at time 1, and the other at time 2.

The actors got into their parts by learning by rote the detailed case biography of the problem situation (please refer to Appendix Two for a copy of the case biography). The actors' consistency, knowledge and realism was further refined by conducting three-three hour rehearsal sessions, where the researcher played at being a range of different interviewers, and provided feedback on the efficacy of the actors' performance. Selected parts of the training sessions were videoed, and given to the actor to watch and review
at home between sessions. The sessions were conducted about two weeks prior to each of the data collection phases (time 1 - before training, and time 2 - near the completion of training). The actors' consistency and accuracy of portrayal was further monitored by the researcher throughout the course of the 18 interviews conducted at time 1, and again at time 2 through an audio-visual link to the adjacent interview room. Brief feedback was given to the actor after each interview session. This feedback was used to keep the actor on task and motivated. All interview sessions were deemed adequate for research purposes.

To increase the face validity of the standard case used, all names were altered from time 1 to time 2, with the case being presented as if it were a different one to the participants. Employing a different actor at time two also enhanced the face validity of the interview task. It was assumed that any case familiarity effects would be equal for both groups and minimised by the time between interviews. Data, which will be presented, in later sections support this view.

4.3.2. Validation of the case biography

To enhance the face validity of the interview tasks, the problem situation was based upon a realistic compilation of several case histories written by the researcher. To check the validity of the case scenario, four practising senior educational psychologists were contacted, and then sent a covering letter which asked them to read the case biography and, using Questionnaire D, rate it for realism, difficulty, complexity and familiarity. (See Appendix Two for a copy of the covering letter and Questionnaire D.) An 8-point Likert-type scale was used for each variable, with 1 being "very realistic/ difficult/ complex/ familiar and 8 being not at all realistic/ difficult/ complex/ familiar". The questionnaire asked for their job title and the number of years' experience they had had as an educational psychologist.

The results obtained showed that the case was seen as very realistic (median = 1), and familiar (median = 1), having moderate difficulty (median = 4), and complexity (median = 4). All four respondents were experienced senior educational psychologists with between 10 and 20 years' experience (two with between 10 and 14 years and two with between 15 and 20 years). The results confirmed that the chosen case scenario,
which was used at time 1 and time 2, was perceived by experienced practitioners as being very realistic and familiar and of moderate difficulty and complexity.

4.3.3. Participants and setting
A group of 10 EPITs was randomly selected from a cohort of 16 enrolled in the one-year full-time Masters training programme at UCL. A second group of eight participants acted as a comparison group for study two. Initially ten people were contacted, however two declined to take part because of travel considerations. The comparison group (control group) consisted of people who had been interviewed for, and had been offered places on the same training programme as the EPIT group, but for various reasons (e.g., lack of funding, personal circumstances) had not taken up the offer of a training place. The only inducements offered to participants was discussion of the general research findings, feedback on their performance at the completion of the study, refreshments and reimbursement of travel expenses.

The participants conducted an initial interview with one female teacher, in a room set-up to model those typically used for interviewing. A mini-video camera and conference-level audio tape recorder were chosen so as to reduce the impact that recording may have had on the session. The video and audio equipment were managed by the researcher at the start and finish of each interview session.

4.3.4. Demographic information on participants at time 1
The demographic information obtained from a Background Information Questionnaire (BI) (which will be described in the next section) was used to determine whether the two groups of participants, were actually equivalent at the start of the research project. This was important in terms of evaluating whether any changes noted between the two groups (from time 1, to time 2), might not have been attributable to significant differences which existed between the groups before the study started.

Because of the relatively small sample size statistical analyses within this section used the Fisher Exact Probability Test. This is a non-parametric test suited for analysing information within small data sets. Where appropriate, before the data could be analysed some measures needed to be collapsed to form 2 X 2 tables. Because of this it was not
possible to test the following categories: first degree type, first degree major, and "had observed an educational psychologist".

Statistical analyses indicated that there were no significant differences between the EPIT and control groups on six out of the seven characteristics selected for analyses. There were no significant differences between the groups on age (p = 0.41), gender (p = 0.07, but close to 0.05 significance level: this is not surprising given that the control group had three males, whilst the EPIT group had none), years of teaching experience (p = 0.38), post-graduate qualifications (p = 0.29), years since gaining Graduate Basis for Registration (BPS) (p = 0.22), and counselling training (p = 0.79).

There was however a significant difference observed between the two groups on degree level (p = 0.02). This result showed that the EPIT group contained more people with Bachelor degrees awarded with a 2:i level of honours, than the control group.

4.3.4.1. Summary

1. Age

Of the EPIT group: 20% (2) were aged under 26 years of age, 70% (7) were aged between 26 to 35 years, no-one was aged between 36 and 45 years, and 10% (1) were aged 46 to 65 years. The figures for the control group showed that no-one was aged under 26 years of age, 75% (6) were aged between 26 and 35 years, 25% (2) were aged between 36 and 45 years, and no-one was aged 46 to 65 years.

2. Gender

Of the EPIT group 100% (10) were female. The figures for the control group show that 62% (5) were female and 37% (3) were male.

3. Years of teaching experience

Of the EPIT group no-one had taught for less than two years, 30% (3) had taught for two years, no-one had taught for three years, 10% (1) had taught for three or four years, 20% (2) had taught for five years, and 40% (4) had taught for over five years. The figures for the control group show that no-one had taught for less than two years, 12.5% (1) had taught for two years, no-one had taught for three or four years, 37.5% (3) had taught for
five years and 50% (4) had taught for over five years.

4. Level of honours for first degree
Of the EPIT group 60% (6) had obtained a 2.i level of honours for their first degree, with the remaining 40% (4) receiving a 2.ii level. The figures for the control group show that 37.5% (3) gained a 2.i level of honours, with 62.5% (5) receiving a 2.ii level.

5. Majoring subject for first degree
Of the EPIT group, 90% (9) had gained a first degree in which psychology was the only major, no one had completed a first degree with a double major, 10% (1) had not done a first degree in psychology, and no-one had done a degree where psychology was a supporting subject or completed another type of qualification. The figures for the controls show that 37.5% (3) had completed a first degree in which psychology was the only major, 50% (4) had completed a first degree with a double major in psychology, no-one had done a non-psychology degree or a degree where psychology was a supporting subject, and 12.5% (1) indicated that they had done something different for their first degree.

6. Post graduate qualifications
Of the EPIT group no-one had completed a diploma level teaching qualification, 80% had completed a PGCE (Post Graduate Certificate of Education), and 20% (2) had completed a Masters level qualification. The figures for the controls shows that 25% (2) had completed a diploma level qualification, 75% (6) had completed a PGCE and no one had a Masters level qualification.

7. Years since awarded graduate basis for registration
Of the EPIT group no-one had gained registration under three years ago, 40% (4) had obtained registration three years ago, no-one four years ago, 20% (2) had gained it five years ago, 20% (2) six years ago and 20% (2) had gained it over six years ago. The figures for the controls show that no-one had gained registration in three or under three years ago, 12.5% (1) had obtained it four years ago, 12.5% (1) five years ago, 25% (2)
six years ago and 50% over six years ago.

8. Counselling or related training
Of the EPIT group 20% reported that they had undertaken counselling or related training, whilst 80% had not. The figures for the controls show that 25% (2) had done some counselling or related training, whilst 75% (6) had not. Of those that said they had completed counselling or related training no-one, in either group, indicated that they had used this training.

9. Interviewed or observed an educational psychologist
Of the EPIT group 80% (8) indicated that they had either been interviewed by or observed an EP undertaking an interview, while 20% (2) had not. The figures for the controls indicated that 87.5% (7) had either been interviewed by or observed an EP undertaking an interview, while 12.5% (1) had not done so.

4.3.5. Instruments
In addition to transcripts of the participants' interviews, data for this study were gathered through the use of three participant-completed questionnaires: Questionnaire A Background Information (BI) administered at time 1 only, Questionnaire B Written Problem-Analysis (WPA) and Questionnaire C Perceptions of Interview (PI). Initial drafts of these questionnaires were piloted on a small sample of EPITs (N=4), taken from a similar population to the final sample (i.e. EPITs enrolled in the UCL course). On the basis of feedback received from these EPITs, alterations were made to the wording of a number of items, and to the layout of the questionnaires.

4.3.5.1. Questionnaire A - Background Information (BI)
This questionnaire was concerned with the following background variables: age, gender, years of teaching experience, type of undergraduate degree (i.e. psychology major or mixed degree), highest qualification level, years since graduating (undergraduate degree), counselling training/experience, and contact with educational psychologists.
4.3.5.2. Questionnaire B - Written Problem Analysis (WPA)

This questionnaire was devised to collect information on participants' data collection, and reasoning about the teachers' problem situation, as presented during the initial interview situations. The WPA is a re-worked version of an instrument first devised by Robinson and Halliday (1988). Though this measure has had only limited research use, Robinson and Halliday note that it has a high level of internal reliability, and is useful in discriminating between participants for research purposes. The questionnaire was divided into four sub-sections with participants required to:

1. "Identify the various aspects of the presenting problem(s)",

2. "Describe, with reasons, the most important aspects of the case and give reasons why others were less important",

3. "Identify the possible current factors influencing those aspects you identified as most important", and

4. "Describe, with reasons, the steps you would take/recommend regarding further assessment or intervention".

It was suggested to participants that they spend no more than 15 minutes on each of the above questions.

4.3.5.3. Questionnaire C - Perceptions of Interview (PI)

This questionnaire was devised to obtain information on participants' perceptions of the interview process, the difficulty and familiarity of the case presented to them, the face validity of the problem and actor, and finally their overall rating of the quality of their own problem analyses.

4.3.6. Procedures

Time 1 (before the start of training)

Participants were informed by letter and by telephone about the interview they would be
undertaking and the tasks involved. They were advised that an actor was being used, but they needed to operate "as if they were a fully qualified educational psychologist, and the actor was a real teacher". Written instructions for completing the interview task and questionnaires were also outlined and explained in the briefing letter, which was sent out about two weeks before the session. (Please refer to Appendix Two, Letter Two, for a copy of the briefing letter given to participants.)

Each participant was able to interview the teacher for up to 30 minutes at which point the session was terminated by the researcher, who came into the room and stated "time is now up, thank you very much, you can now complete the questionnaires in the adjoining room". Each participant was then given up to an hour to complete the three questionnaires. Within both the interview room and the area used for filling in the questionnaires there were analogue clocks, these were drawn to the attention of each participant with the phrase, "You may find this (pointing to the clock) helpful in pacing your time".

**Time 2 (near the completion of training)**
The procedures used were the same as at time 1, except a new actor was used and the names of all the characters were changed. (Please refer to Appendix Two, Letter Three, for a copy of the briefing letter given to participants.) Questionnaire A was not used and in its place two additional questionnaires were added. These will be described in detail in the next chapter.

**Training of raters/coders at time 1 and at time 2**
Once the participants' written problem analyses were typed, and interviews were transcribed they were then rated-coded by the researcher. A random sample of 33% (12) of the 36 scripts were rated-coded a second time by a senior educational psychologist/course tutor. The second rater/coder was not aware of the specific purpose or the design of the study, but was familiar with marking problem analyses. For statistical analyses, once acceptable inter-rater, and inter-coder reliabilities had been established (set at or above 70% agreement), then the scores of the first rater/coder were used for all subsequent analyses.
Inter-rater and inter-coder agreements were calculated using the effective agreement formula for low frequency behaviours (Hartmann, 1977), that is:

\[
\frac{\text{number of agreements}}{\text{number of agreements} + \text{number of disagreements}} \times 100
\]

1. **Ratings of problem-analysis quality**: Rater training involved four hours work with the researcher in which a selection of written problem analyses were gone through and rated using the research definitions outlined in the next section. Agreements and disagreements were highlighted and discussed with reference back to the case biography, model problem analysis, and definitions. About another six hours of personal study was needed before inter-rater agreements were satisfactory (i.e. consistently at or above 70%).

2. **Codings of open and closed questions, number of interviewer utterances, and accessible reasoning**: Coder training occurred at the same time as problem-analysis training and followed a similar format.

4.3.7. **Dependent variable measures and scoring procedures**

4.3.7.1. **Questionnaire A - Background variables**
A total of 10 variables were extracted for analysis. The main purposes for focusing upon these variables was to check if the two groups were comparable before the start of the training year. (Please refer to Appendix Two for copies of Questionnaires A, B and C.)

4.3.7.2. **Questionnaire B - Problem-analysis quality**
This questionnaire was used to assess aspects of the participants' written analysis of the teacher's problem situation following interview. A total of 10 variables were extracted for analysis (e.g., nine subscales and an overall score which was the sum of the sub-scale
ratings). The nine subscales assessed the match between each participant's analysis and that provided in the model problem analysis.

The model problem analysis for the case was written by the researcher, and then, in conjunction with the case biography, given to a director of a university-based training programme for educational psychologists and a tutor on a training course for their feedback and comment. The director and course tutor were familiar and competent in writing and assessing problem analyses. A final version of the model problem analysis was prepared after discussion and resolution of points of difference between both parties. The participants' problem analyses, derived from Questionnaire B (WPA), were rated on nine criteria assessing the quality of aspects of their analysis. An overall score was also obtained by adding together the individual ratings for each sub-component. This appeared justifiable given the high level of internal reliability obtained when the measure was used in Robinson and Halliday's (1988) study. Data reported in the results section of this chapter indicate that a similar pattern of results was obtained. They argued that "since the differing components of the quality measure tapped the same underlying construct" (p.58), use of the total score in analyses was supportable. Nine 8-point Likert-type scales (i.e. 1 = high quality, to 8 = low quality) were used for this purpose.

The following nine criteria were used to rate participants written problem analyses, and were based on criteria developed by Robinson and Halliday (1988).

NOTE: The names of some of the characters used in study two were adapted from ones, which appear in a series of novels by Maupin (1989). Any similarity between the personalities or other features of the characters used in this thesis and those in the novels is purely coincidental (e.g., Mary Singleton, Mona Ramsey, Michael Toliver, and Brian Hawkins).
Sections of Questionnaire B (WPA)

Section One: "Identify the various aspects of the presenting problem(s)".

1. **Accuracy**: This scale measured the degree to which the aspects identified by the participants were in fact based on the facts of the case, as given to the role player, or whether they included errors such as over-generalisation and speculative inference (e.g., a participant infers, without supporting evidence that Mary Singleton [Mona Ramsey] was not a competent teacher even though there was no suggestion that competency was an issue during a recent staff appraisal, or in the previous year; a participant infers without supporting data that because Michael [Brian] had few friends that "low self-esteem", and being lonely" were two of his problems).

2. **Completeness**: This scale measured the degree to which the participants had highlighted all those aspects of the teacher's problem situation, which had been identified in the model problem analysis. The use of alternative wording, which did not imply disagreement at a conceptual level, were ignored. Incompleteness occurred when the participants only shared those aspects of the problem situation which the teacher themselves had identified (e.g., Mary Singleton [Mona Ramsey] asked to see an educational psychologist for help dealing with a disruptive child in her class. She was inexperienced and clearly stated that curriculum and classroom management are "very difficult and demanding areas" for her. The participant did not include these as dimensions of the problem situation but instead focused only on the disruptive behaviour of the child which was identified by the teacher).

3. **Clarity**: This scale measured the degree to which the participant's written analysis was clear and ordered (i.e. how adequately were main ideas highlighted and readily understood). Clarity was achieved by the use of self-explanatory headings or phrases, or by the inclusion of examples. A lack of clarity resulted from confused writing, from the inclusion of irrelevant detail or from the generation of a long repetitive list (e.g., A participant identified that one of Michael's [Brian's] problems was a lack of "Motivation". Did this mean that Michael [Brian] appeared unmotivated in academic and social situations, or that the teacher's style was unmotivating, or something else? It was
unclear from the heading what actually was the problematic aspect of the problem).

Section Two: "Describe, with reasons, the most important aspects of the case and give reasons why others were less important".

4. Agreement between participant and experts: This scale measured the degree of agreement between the participant's view and the expert's view regarding the relative importance of the various aspects of the problem.

5. Soundness of argument for relative importance of aspects: This scale measured the quality of the arguments put forward to justify the participant's own priorities. Sound arguments were consistent with knowledge of psychological theory and research, accepted current practice, and consistent with the facts of the case. Arguments about importance or priorities could be made on the basis of their urgency or on the basis of causal relationships between different aspects of the teacher's problem situation.

Section Three: "Identify the probable current causes of the factors influencing those aspects you have identified as most important"

6. Soundness of argument for causes of priority: This scale measured how well the participants explained the causes of the aspect(s) of the problem, which they had identified as being important. Sound arguments were factually correct, relevant and consistent with sound psychological knowledge, and accepted current practice (e.g., the statement that "Anne's [Mona's] current difficulties with Michael [Brian] and her class are caused by her low commitment to teaching". This statement, as it stands, is inconsistent with the facts of the case, as given to the role player. There is nothing to suggest that Anne's [Mona's] commitment to teaching is any different than in the previous year, when she was not having these difficulties. The statement "It may well be that she is not suited to teaching", would require the use of supporting data and argument to rate highly on the soundness-of-argument criteria).
Section Four: "Describe, with reasons, the steps you would take/recommend regarding further assessment or intervention".

7. **Specificity:** This scale measured the extent to which the suggestions made by participant's were specific (e.g., "I will help Anne [Mona] to work on her classroom management problems so that she can assist Michael [Brian] to take greater responsibility for his behaviour", fails to specify the nature of the assistance to be offered, the time it will be given, and the role Anne [Mona] or Michael [Brian] are to play in the process). In other words, specificity refers to clear statements about, who will be involved, what and how they will do it, where they will do it, and under what conditions (e.g., time, duration), and how it will be evaluated.

8. **Appropriateness:** Appropriateness was assessed with reference to the facts of the case and relevant theory and research. Suggestions which repeated ideas that had already been tried and not been successful, that were inconsistent with probable causal relationships, or that were unlikely to succeed were viewed as inappropriate (e.g., it does not make sound psychological sense to ask Michael [Brian] to go away and reflect upon his behaviour when there was considerable evidence that being unable to monitor and control his behaviour, and emotions were important aspects of the problem situation).

9. **Completeness:** The next steps section was complete when participants had addressed all aspects of the problem given priority by them, and any other aspects which were likely to affect their implementation (e.g., Anne Singleton [Mona Ramsey] was distressed by Michael's [Brian's] challenging behaviour. A participant argued that the teacher and the class were being affected by Michael's [Brian's] "outbursts", and that Michael's [Brian's] learning and emotional needs were not being met. The participant recommended that the "teacher be firmer and set up a reward system". These steps were incomplete in that they did not address the immediate problem of Michael's [Brian's] challenging behaviour and the teacher's issues with classroom and curriculum management. Together, these factors would make a "reward system" much less effective, than recommendations for next steps, which clearly addressed the priority problem(s), and those factors which were likely to affect success, such as teacher skills.
Section Five. *Overall problem-analysis rating*

10. **Overall Rating:** The overall problem-analysis score was obtained by adding together all the sub-scale scores.

Following training and feedback inter-rater agreements of 78% at time 1, and 81% at time 2 were obtained.

4.3.7.3. *Questionnaire C - Participants' perceptions of the interview task and their own problem-analysis quality*

This questionnaire was used to sample participants' perceptions of the interview task and its content, and their rating of the quality of their own problem analysis. A total of six variables were extracted for analysis.

Five 8-point Likert-type scales were used to assess participants' perceptions of the familiarity and complexity of the task, the overall difficulty of the initial interview task, the extent to which the case was "like a real case" and the degree to which the actor was convincing in their portrayal of the case. A further question asked participants to rate the overall quality of their written problem analysis, again using an 8-point Likert-type scale. These questions were included to provide a check on the validity of the tasks being used.

4.3.7.4. *Analysis of participants' interview transcripts*

1. **Open questions:** are usually used by educational psychologists to orient themselves to the teacher's problem situation. The intent behind open questions is predominantly exploratory. The guiding assumptions are usually interactional and systemic. Questions are formulated to bring forth the teacher's perspective of the "patterns that connect" persons, objects, actions, perceptions, ideas, feelings, events, beliefs, contexts (Bateson, 1972; Tomm, 1985). For example, "Can you tell me how Michael's [Brian's] behaviour is affecting you and the other children?" "What do you think is the purpose of this behaviour?" An open question usually results in the interviewee providing an elaboration of an opinion or interpretation of events. Analyses
Figure 4.1 Examples of accessible and inaccessible reasoning

<table>
<thead>
<tr>
<th>Accessible Reasoning</th>
<th>Inaccessible Reasoning</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Given what you said about your teacher training, and your current perception regarding your lack of confidence with classroom management, it might be a good idea if we looked into further training, it could help not only your confidence but also improve the ways you approach Michael.”</td>
<td>“It might be a good idea if you looked into further training.”</td>
</tr>
<tr>
<td><strong>Comment:</strong></td>
<td><strong>Comment:</strong></td>
</tr>
<tr>
<td>The interviewer’s POINT OF VIEW is supported by argument specifically derived and related to the teacher’s stated goals.</td>
<td>This point of view is unsupported by any data or case-related argument. It may well be true, but the reasoning behind the stated opinion is not made explicit.</td>
</tr>
<tr>
<td>“So you see that your lack of confidence is causing problems with class management and organisation, and because of that you feel stressed and not able to cope at times.”</td>
<td>“So you’ve mentioned three things: your lack of confidence with classroom discipline, curriculum planning, and that you would like Michael removed.”</td>
</tr>
<tr>
<td><strong>Comment:</strong></td>
<td><strong>Comment:</strong></td>
</tr>
<tr>
<td>The INTEGRATION of the teacher’s information establishes causal connections, and begins to describe the dynamics of an aspect of the teacher’s problem, which is checked out with the teacher.</td>
<td>This summary lists but does not establish connections between pieces of the teacher’s information.</td>
</tr>
<tr>
<td>“If Michael doesn’t get transferred, which we agree is quite likely, then you’re going to have to deal with the situation. Given your feelings about Michael we should see if there are ways we could make the situation more tolerable for you, Michael and the class.”</td>
<td>“I think we should look at what we can do with Michael in case he isn’t bad enough to transfer, because he might not.”</td>
</tr>
<tr>
<td><strong>Comment:</strong></td>
<td><strong>Comment:</strong></td>
</tr>
<tr>
<td>The POINT OF VIEW that the management of Michael should be discussed is supported by argument specific to the teacher’s case, and is checked out with the teacher.</td>
<td>The interviewer’s point of view is not adequately supported. The interviewer does not say why the teacher should consider a situation which may or may not arise.</td>
</tr>
</tbody>
</table>
yielded inter-coder agreements of 81% for time 1, and 76% for time 2.

2. **Closed questions**: are again usually asked to orient the educational psychologist to the teacher's problem situation. Closed questions are based on linear assumptions about the nature of the problem situation. The intent behind these questions is predominantly investigative. The educational psychologist behaves much like a detective trying to find out all there is about the facts of the case. The basic questions are all the "Who did what? Where? When? How? and Why? questions (e.g., "When does Michael [Brian] act out the most?" "How many times in a week does this happen?") (Tomm, 1985). A closed question usually results in the interviewee providing a "Yes", "No", or short statement without much elaboration (e.g., "Sometimes he does, yes"). Analyses yielded inter-coder agreements of 93% for time 1, and 85% for time 2.

3. **Number of interviewer utterances**: The actual number of interviewer utterances during each interview task were added up to provide a total. This provided a measure of the amount of interviewer talk. Analyses yielded inter-coder agreements of 100% for time 1, and 100% for time 2.

4. **Accessible reasoning statements**: Participants' interviews were transcribed, and the frequency of utterances, which expressed an understanding or interpretation of some aspect of the teacher's data, supported by relevant evidence or argument, were counted as examples of accessible reasoning. For example, "I was wondering, when you said that you found "keeping the children focused and on-task challenging", whether curriculum and general classroom management were areas worth exploring, because a considerable part of the process of teaching children involves planning and organisation?" would be counted as an instance of accessible reasoning. This is because the participant's viewpoint and the logic which supports it is made explicit to the interviewee. The following example, "I think the Government/LEA should make more resources available for SEN", would not be counted because there is no evidence or argument given by the interviewer to support their perspective. Analyses yielded inter-coder agreements of 100% for time 1, and 90% for time 2. Further examples of both accessible and
inaccessible reasoning are given in Figure 4.1.

4.3.8. Statistical analyses

All the data for this study were collected using a series of 1 to 8 Likert-type rating scales. For the purposes of statistical analyses it was assumed that these measures recorded responses from underlying rank order scales. As a result non-parametric statistics were used (Glegg, 1982; Heyes et al, 1986; Howell, 1989). For all between groups comparisons of medians the Mann-Whitney statistic was used; for all within group comparisons of medians the Wilcoxon Signed Ranks statistic was used; and for all correlational comparisons the Spearman's Rank Order Correlation statistic was used. Because of the small sample size all correlational investigations involved combining the data for the EPIT and control groups. This was done because the purpose of such investigations was to identify patterns within the data; reference to other tests was made in order to interpret any patterns noted. An alpha level of significance of 0.05 was used; where a different alpha level was employed, this is clearly identified. In addition, the Bonferroni Correction statistic was applied to all correlations involving more than 10 tests of any given data set. This was done because with such a small sample size there is an increased risked of error (i.e. results being significant or not) associated with the increased number of tests made. The SPSS computer package held on disk at the Psychology Department at UCL (version 7.5) was used for all statistical analyses.
Table 4.1 Medians and interquartile ranges of EPITs’ and controls’ perceptions of interview task at time 1 and time 2

<table>
<thead>
<tr>
<th>Measure</th>
<th>EPITs</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time 1</td>
<td>Time 2</td>
</tr>
<tr>
<td>Contents of Case</td>
<td>Medians</td>
<td>IQR</td>
</tr>
<tr>
<td>Familiarity</td>
<td>7.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Complexity</td>
<td>3.00</td>
<td>3.00</td>
</tr>
<tr>
<td>Difficulty</td>
<td>2.50</td>
<td>1.00</td>
</tr>
<tr>
<td>Interview Situation</td>
<td>Medians</td>
<td>IQR</td>
</tr>
<tr>
<td>Reality</td>
<td>2.00</td>
<td>3.00</td>
</tr>
<tr>
<td>Convincingness</td>
<td>1.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

NOTE: All dimensions were measured on an 8-point Likert-type scale with 1 being labelled ‘very familiar’, ‘very complex’, ‘very difficult’, ‘very realistic’ and ‘very convincing’, and 8 being labelled ‘not at all familiar’, ‘not at all complex’, ‘not at all difficult’, ‘not at all realistic’, and ‘not at all convincing’. 
Table 4.2  Mann-Whitney scores for between group comparisons of perceptions of interview task at time 1 and time 2

<table>
<thead>
<tr>
<th>Measures</th>
<th>EPITs vs Controls (Time 1)</th>
<th>EPITs vs Controls (Time 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U</td>
<td>P</td>
</tr>
<tr>
<td><strong>Contents of Case</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Familiarity</td>
<td>28.50</td>
<td>0.31 NS</td>
</tr>
<tr>
<td>Complexity</td>
<td>28.00</td>
<td>0.31 NS</td>
</tr>
<tr>
<td>Difficulty</td>
<td>21.00</td>
<td>0.10 NS</td>
</tr>
<tr>
<td><strong>Interview Situation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reality</td>
<td>36.50</td>
<td>0.76 NS</td>
</tr>
<tr>
<td>Convincingness</td>
<td>29.50</td>
<td>0.36 NS</td>
</tr>
</tbody>
</table>

NS = Non-significant
Table 4.3 Wilcoxon scores, for within group comparisons of perceptions of interview task at time 1 and time 2

<table>
<thead>
<tr>
<th>Measure</th>
<th>EPITs (Time 1 vs Time 2)</th>
<th>Controls (Time 1 vs Time 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W</td>
<td>P</td>
</tr>
<tr>
<td>Contents of Case</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Familiarity</td>
<td>55.00</td>
<td>0.01 *</td>
</tr>
<tr>
<td>Complexity</td>
<td>43.00</td>
<td>0.11</td>
</tr>
<tr>
<td>Difficulty</td>
<td>53.00</td>
<td>0.01 *</td>
</tr>
<tr>
<td>Interview Situation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reality</td>
<td>16.00</td>
<td>0.25</td>
</tr>
<tr>
<td>Convincingness</td>
<td>16.00</td>
<td>0.24</td>
</tr>
</tbody>
</table>

* p<.05
4.4. RESULTS

4.4.1. Perceptions of the interview tasks

Perceptions of the interview task at time 1

Table 4.1 presents a comparison of medians and interquartile ranges for both groups on the five measures used. Results indicate that the EPIT and control groups perceived the actor and the case to be very convincing and very realistic, they also found the case content difficult and complex, and as would be expected at time 1 not very familiar to them. Table 4.2 shows between group analyses (Mann-Whitney) which suggest that at time 1 there were no significant differences between the two groups in their perceptions on any of the five measures. These results provide support for the external validity of the simulation task and argue that it provided a suitable vehicle to explore interviewer problem understanding.

Summary of hypotheses

The main research question asked of the data was:

1. How do EPITs perceive the interview task?

The data collected provided support for the following hypotheses:

1.1. That there would be no significant difference between EPITs and controls in their perceptions of the interview task, with both groups seeing the task as convincing, difficult and unfamiliar;

1.2. That the simulation task would provide a valid means of assessing problem understanding.

Perceptions of the interview task at time 2

Tables 4.1 and 4.2 show that, nine months later, the EPITs' perceptions differed in several predictable ways from those of the controls. Table 4.3 presents within group analyses.
Table 4.4 Medians and interquartile ranges of EPITs' and Controls' problem-analysis subscale and total scores at time 1 and time 2

<table>
<thead>
<tr>
<th>Criteria</th>
<th>EPITs</th>
<th>Controls</th>
<th>Controls</th>
<th>EPITs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time 1</td>
<td>Time 2</td>
<td>Time 1</td>
<td>Time 2</td>
</tr>
<tr>
<td>Accuracy</td>
<td>3.00 1.00</td>
<td>3.00 1.00</td>
<td>3.50 2.75</td>
<td>3.50 2.00</td>
</tr>
<tr>
<td>Completeness</td>
<td>7.00 1.00</td>
<td>3.00 1.00</td>
<td>7.00 1.75</td>
<td>5.50 1.00</td>
</tr>
<tr>
<td>Clarity</td>
<td>8.00 3.00</td>
<td>3.00 1.00</td>
<td>7.00 1.75</td>
<td>6.00 1.00</td>
</tr>
<tr>
<td>Priority aspects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agreement with experts</td>
<td>6.00 2.00</td>
<td>3.00 0.00</td>
<td>6.00 2.00</td>
<td>6.50 1.00</td>
</tr>
<tr>
<td>Soundness of argument</td>
<td>7.00 2.00</td>
<td>3.00 1.00</td>
<td>6.50 1.00</td>
<td>6.50 1.75</td>
</tr>
<tr>
<td>Current causes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soundness of argument</td>
<td>6.50 2.00</td>
<td>3.00 2.00</td>
<td>6.50 2.00</td>
<td>7.00 1.00</td>
</tr>
<tr>
<td>Next steps</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specificity</td>
<td>7.00 1.00</td>
<td>3.00 1.00</td>
<td>7.00 1.00</td>
<td>7.00 1.00</td>
</tr>
<tr>
<td>Appropriateness</td>
<td>6.50 1.00</td>
<td>3.00 1.00</td>
<td>6.00 2.00</td>
<td>6.50 1.75</td>
</tr>
<tr>
<td>Completeness</td>
<td>7.00 0.00</td>
<td>4.00 2.00</td>
<td>7.00 1.00</td>
<td>6.50 1.00</td>
</tr>
<tr>
<td>Total score</td>
<td>57.00 10.00</td>
<td>28.50 6.00</td>
<td>57.50 10.25</td>
<td>55.50 8.25</td>
</tr>
</tbody>
</table>

**NOTE:** Outcome subscale ranges from 1 (high quality) to 8 (low quality). Possible total score range between 9 (highest quality) to 72 (lowest quality).
Table 4.5  Mann-Whitney scores for between group comparisons of problem-analysis ratings at time 1 and time 2

<table>
<thead>
<tr>
<th>Criteria</th>
<th>EPITs vs Controls (Time 1)</th>
<th>EPITs vs Controls (Time 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U</td>
<td>P</td>
</tr>
<tr>
<td>Aspects of teacher's problem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accuracy</td>
<td>30.00</td>
<td>0.41</td>
</tr>
<tr>
<td>Completeness</td>
<td>38.50</td>
<td>0.90</td>
</tr>
<tr>
<td>Clarity</td>
<td>32.50</td>
<td>0.52</td>
</tr>
<tr>
<td>Priority aspects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agreement with experts</td>
<td>36.50</td>
<td>0.76</td>
</tr>
<tr>
<td>Soundness of argument</td>
<td>40.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Current causes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soundness of argument</td>
<td>56.00</td>
<td>0.76</td>
</tr>
<tr>
<td>Next steps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specificity</td>
<td>39.50</td>
<td>0.97</td>
</tr>
<tr>
<td>Appropriateness</td>
<td>34.00</td>
<td>0.63</td>
</tr>
<tr>
<td>Completeness</td>
<td>32.00</td>
<td>0.52</td>
</tr>
<tr>
<td>Total score</td>
<td>37.50</td>
<td>0.83</td>
</tr>
</tbody>
</table>

** p<.01
Table 4.6 Wilcoxon scores for within group comparisons of problem-analysis ratings

<table>
<thead>
<tr>
<th>Criteria</th>
<th>EPITs (Time 1 vs Time 2)</th>
<th>Controls (Time 1 vs Time 2)</th>
</tr>
</thead>
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<tr>
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<td>W</td>
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<tr>
<td>Aspects of teacher's problem</td>
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</tr>
<tr>
<td>Accuracy</td>
<td>15.00</td>
<td>0.04</td>
</tr>
<tr>
<td>Completeness</td>
<td>55.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Clarity</td>
<td>45.00</td>
<td>0.01</td>
</tr>
<tr>
<td>Priority aspects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agreement with experts</td>
<td>55.00</td>
<td>0.01</td>
</tr>
<tr>
<td>Soundness of argument</td>
<td>45.00</td>
<td>0.01</td>
</tr>
<tr>
<td>Current causes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soundness of argument</td>
<td>45.00</td>
<td>0.01</td>
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<tr>
<td>Next steps</td>
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<tr>
<td>Specificity</td>
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</tr>
<tr>
<td>Appropriateness</td>
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<td>0.01</td>
</tr>
<tr>
<td>Completeness</td>
<td>55.00</td>
<td>0.01</td>
</tr>
<tr>
<td>Total score</td>
<td>55.00</td>
<td>0.01</td>
</tr>
</tbody>
</table>

** p<.01
(Wilcoxon Test) which suggest that following training EPITs now judged the interview task to be significantly more familiar, and significantly less difficult to them than at the start of training. Given that the training course provided in-depth experiences with a wide range of case work, both at university and on placements, this is not a surprising result. The task is still judged to be complex, and the actor and case are still seen as being convincing and realistic. Results for the control group show no significant changes in perception over the same period of time.

Summary of hypothesis
The main research question asked of the data was:

1. How do EPITs perceive the interview task?

The data collected provided support for the following hypothesis:

1.1. That there would be a significant difference between EPITs and controls in their perceptions of the interview task by the end of training, with EPITs perceiving the task as being more familiar and less difficult.

4.4.2. The quality of problem understanding
The quality of EPITs' and controls' understanding of the teacher's problem situation was judged by rating their written problem analyses on nine separate criteria which were then totalled to give an overall quality score. Ratings ranged from 1 (high quality understanding) to 8 (low quality understanding), so the best possible overall quality score was 9 and the worst possible score was 72.

Quality of problem understanding at time 1
Results presented in Table 4.4 show that at time 1 the total median quality score for both EPITs and controls was almost identical. Both groups totals were towards the lower end of the quality scale (EPITs' median total score = 57.00, controls' median total score = 57.50). For both groups the highest quality score was achieved on the "accuracy" criteria (EPITs' median score = 3.00, controls' median score = 3.50). This result suggests that both groups would usually report any facts about the teacher's problem situation.
accurately.

On all the other criteria both groups achieved below average quality ratings. These results suggest that both groups found it difficult to clarify the various aspects of the teacher's problem situation, identify priorities with their possible causes, and argue a comprehensive case for specific ways forward. Both groups' problem analyses were consistently rated as being of a below average standard.

Table 4.5 shows that between group analyses (Mann-Whitney), yielded no significant differences between the two groups on any of the nine subscale measures or for the overall problem-analysis score. This result is consistent with earlier evidence suggesting that the two groups were largely comparable at time 1. At this stage in training the difference between the groups (i.e. first-degree level) does not appear to be a significant factor.

**Intercorrelations between problem-analysis quality scores and criteria**

Table 4.7 presents the intercorrelations between problem-analysis quality scores at time 1 and showed that the various criteria behaved in ways that were consistent with their conceptualisation. Four of the nine criteria correlated very highly with the overall quality score, "Clarity", "Agreement with experts", "Causes", and "Specificity".

**Summary of hypotheses**

The research question asked of the data at time 1 was:

2. How do EPITs rate the quality of their problem analyses?

Data collected **provided support** for the following hypothesis:

2.1. That there would be no significant difference between EPITs and controls in their self ratings of their written problem analysis quality prior to the start of EPIT training.

A further research question asked of the data was:

3. At the start of training, what would be the quality of problem understanding produced by EPITs and controls?
Table 4.7 Inter-correlations among participants’ problem-analysis quality ratings at time 1

<table>
<thead>
<tr>
<th></th>
<th>Acc</th>
<th>Comp</th>
<th>Clar</th>
<th>Agree</th>
<th>Argu</th>
<th>Causes</th>
<th>Spec</th>
<th>Approp</th>
<th>Comp NS</th>
<th>Total</th>
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</thead>
<tbody>
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<td>-0.04</td>
<td>0.03</td>
<td>-0.19</td>
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<tr>
<td>Comp</td>
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<td>0.31</td>
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<td>0.00</td>
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<td>Clar</td>
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<td>0.21</td>
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<td>0.74</td>
<td></td>
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</tr>
<tr>
<td>Agree</td>
<td>~</td>
<td>0.81</td>
<td>0.77</td>
<td>0.63</td>
<td>0.20</td>
<td>0.41</td>
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<tr>
<td>Argu</td>
<td>~</td>
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<tr>
<td>Causes</td>
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<tr>
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<td>Approp</td>
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<td></td>
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<td>Comp NS</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**KEY:**
- Acc = accuracy of aspects
- Comp = completeness of aspects
- Clar = clarity of aspects
- Agree = agreement with experts on choice of priorities
- Argu = soundness of argument for priorities
- Causes = soundness of argument for causes of priority aspects
- Spec = specificity of next steps
- Approp = appropriateness of next steps
- Comp NS = completeness of next steps
- Total = overall problem analysis quality (sum of ratings)

* p<.05

(Bonferroni correction applied of p<.0012)
<table>
<thead>
<tr>
<th></th>
<th>Acc</th>
<th>Comp</th>
<th>Clar</th>
<th>Agree</th>
<th>Argu</th>
<th>Causes</th>
<th>Spec</th>
<th>Approp</th>
<th>Comp NS</th>
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<td>0.77 *</td>
<td>0.66</td>
<td>0.76 *</td>
<td>0.79 *</td>
<td>0.76 *</td>
<td>0.77 *</td>
</tr>
<tr>
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<td>0.80 *</td>
<td>0.90 *</td>
<td>0.88 *</td>
<td>0.91 *</td>
<td>0.90 *</td>
<td>0.93 *</td>
</tr>
<tr>
<td>Clar</td>
<td>~</td>
<td></td>
<td></td>
<td>0.88 *</td>
<td>0.83 *</td>
<td>0.89 *</td>
<td>0.87 *</td>
<td>0.90 *</td>
<td>0.88 *</td>
<td>0.95 *</td>
</tr>
<tr>
<td>Agree</td>
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<td></td>
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<td></td>
<td>0.94 *</td>
<td>0.93 *</td>
<td>0.92 *</td>
<td>0.91 *</td>
<td>0.90 *</td>
<td>0.93 *</td>
</tr>
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<td>0.85 *</td>
<td>0.88 *</td>
<td>0.83 *</td>
<td>0.84 *</td>
<td>0.85 *</td>
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<tr>
<td>Causes</td>
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<td></td>
<td>0.92 *</td>
<td>0.92 *</td>
<td>0.92 *</td>
<td>0.94 *</td>
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<tr>
<td>Spec</td>
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<td>0.93 *</td>
<td>0.94 *</td>
<td>0.94 *</td>
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<tr>
<td>Approp</td>
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<td>0.97 *</td>
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<td></td>
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<td></td>
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</tr>
</tbody>
</table>

**KEY:**
- Acc = accuracy of aspects
- Comp = completeness of aspects
- Clar = clarity of aspects
- Agree = agreement with experts on choice of priorities
- Argu = soundness of argument for priorities
- Causes = soundness of argument for causes of priority aspects
- Spec = specificity of next steps
- Approp = appropriateness of next steps
- Comp NS = completeness of next steps
- Total = overall problem analysis quality (sum of ratings)

*p < .05

(Bonferroni correction significant at p < .0012)
Table 4.9 Correlations between participants' self-ratings and actual ratings of problem-analysis quality at time 1 and time 2

<table>
<thead>
<tr>
<th>Problem-analysis criteria</th>
<th>Self-ratings of problem-analysis quality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time 1</td>
</tr>
<tr>
<td>Aspects of teacher's problem</td>
<td></td>
</tr>
<tr>
<td>Accuracy</td>
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</tr>
<tr>
<td>Completeness</td>
<td>0.29 NS</td>
</tr>
<tr>
<td>Clarity</td>
<td>0.34 NS</td>
</tr>
<tr>
<td>Priority aspects</td>
<td></td>
</tr>
<tr>
<td>Agreement with experts</td>
<td>0.16 NS</td>
</tr>
<tr>
<td>Soundness of argument</td>
<td>0.00 NS</td>
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<tr>
<td>Current causes</td>
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<tr>
<td>Soundness of argument</td>
<td>0.14 NS</td>
</tr>
<tr>
<td>Next steps</td>
<td></td>
</tr>
<tr>
<td>Specificity</td>
<td>0.18 NS</td>
</tr>
<tr>
<td>Appropriateness</td>
<td>0.31 NS</td>
</tr>
<tr>
<td>Completeness</td>
<td>0.14 NS</td>
</tr>
<tr>
<td>Total score</td>
<td>0.27 NS</td>
</tr>
</tbody>
</table>

NS = Non-significant
Table 4.10  Correlations between participants’ perceptions of interview task and problem-analysis quality at
time 1 and time 2

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Problem-analysis quality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time 1</td>
</tr>
<tr>
<td>Content of case</td>
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<tr>
<td>Task familiarity</td>
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<td>Task complexity</td>
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<tr>
<td>Task difficulty</td>
<td>0.19</td>
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</table>

NS = Non-significant
Data collected **provided support** for the following hypothesis:

3.1. That at time 1 there would be no significant difference between EPITs and controls in the quality of their written problem analyses, with both groups obtaining overall below average ratings.

**Quality of problem understanding at time 2**

Tables 4.4, 4.5, and 4.6 show that, nine months later, all problem-analysis subscale ratings for the EPIT group were significantly different from those at time 1, and from those of the controls at time 2. Results outlined in Table 4.4 show that the EPITs' median total problem-analysis score had moved towards the higher end of the quality scale, whilst the control groups total score had remained almost the same as it had been at the start of the study (EPITs' median total score = 28.50, controls' median total score = 55.50).

For both groups the highest quality score was again achieved on the "accuracy" criteria (EPITs' median score = 3.00, controls' median score = 3.50). These scores did not change from time 1. For the EPIT group the lowest average score of all was obtained on the "Completeness of next steps" criteria indicating that they are still likely to leave out relevant information in this section even after training.

Table 4.6 shows within group analyses (Wilcoxon), which indicate that on all of the nine subscales, and on the overall problem-analysis rating the EPIT group's median scores were significantly different at time 2 than they were at time 1. The direction of this movement was towards significantly higher quality ratings. During the same period the control group's ratings remained relatively unchanged, and no significant differences were evident between time 1 and time 2. Results indicated that, after a period of training, EPITs' problem-analysis scores were rated as being of a significantly higher quality than they were at the start of training. EPITs' scores were rated as being significantly different to those of the control group whose scores did not differ markedly between time 1 and time 2.
Intercorrelations between problem-analysis quality scores and criteria

Table 4.8 shows that, nine months later, the intercorrelations between problem-analysis quality scores at time 2 are all very highly consistent, except for two, "Accuracy" with "Completeness", and "Accuracy" with "Argument". Overall criteria correlated very highly with each other and with the overall score. These effects could have been attributed to the number of tests of the data undertaken, though this is unlikely given the use of the Bonferroni correction, biasing effects of the EPIT group scores, and possible rater biases. They could equally be attributed to the effects of the intensive and rigorous training programme to which the EPIT group had been exposed.

A high correlation between the separate criteria and the total score would suggest that each scale was measuring related aspects of quality of understanding, and not in fact measuring different types of understanding, or that some were not measuring understanding at all. These results suggested that each aspect was measuring the same underlying construct. This provides support for Robinson and Halliday's (1988) view that the problem-analysis measure they devised was a useful instrument in analysing the quality of interviewers' written understanding. It also provides clear justification for using the total problem-analysis score in some of our analyses.

Perceptions of task, self-rating of problem-analysis quality and problem-analysis score

The correlations between EPITs' and controls' perceptions of task familiarity, complexity and difficulty, and their self-rating of their problem-analysis quality at time 1 and time 2 on the one hand, and overall quality of analysis on the other, were all found to be non-significant (see Tables 4.9 and 4.10). These results indicated that participants' perceptions of the interview task, and their subsequent perceptions of how well they wrote their problem-analysis were not useful in predicting how well they actually would do, even with training in the case of the EPIT group.

Summary of hypotheses

The research question asked of the data was:

3. After a period of training in which interviewing and problem-analysis skills are taught, do EPITs produce higher quality analyses of a teacher's problem?
Table 4.11  Intercorrelations between participants’ interview behaviour scores at time 1 and time 2

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th></th>
<th>Time 2</th>
<th></th>
</tr>
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<tr>
<td></td>
<td>Open</td>
<td>Closed</td>
<td>Utt</td>
<td>Acc</td>
</tr>
<tr>
<td>Open</td>
<td>~</td>
<td>0.17 NS</td>
<td>0.02 NS</td>
<td>0.37 NS</td>
</tr>
<tr>
<td>Close</td>
<td>~</td>
<td>0.09 NS</td>
<td>0.20 NS</td>
<td></td>
</tr>
<tr>
<td>Utt</td>
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<td>-0.08 NS</td>
<td></td>
</tr>
<tr>
<td>Acc</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Key:
- Open = Open questions
- Closed = Closed questions
- Utt = Number of utterances
- Acc = Accessible reasoning
- NS = Non-significant
Table 4.12  Medians and interquartile ranges of EPITs’ and controls’ use of open questions, closed questions, number of utterances and accessible reasoning at time 1 and time 2

<table>
<thead>
<tr>
<th>Interviewer behaviour</th>
<th>EPITs</th>
<th></th>
<th>Controls</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time 1</td>
<td>Time 2</td>
<td>Time 1</td>
<td>Time 2</td>
</tr>
<tr>
<td></td>
<td>Median</td>
<td>IQR</td>
<td>Median</td>
<td>IQR</td>
</tr>
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<td>14.00</td>
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<tr>
<td>Closed questions</td>
<td>43.00</td>
<td>12.00</td>
<td>37.00</td>
<td>16.00</td>
</tr>
<tr>
<td>Number of utterances</td>
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<td>21.00</td>
</tr>
<tr>
<td>Accessible reasoning</td>
<td>0.00</td>
<td>2.00</td>
<td>14.00</td>
<td>7.00</td>
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</table>
Table 4.13  Mann-Whitney scores for between group comparisons of interviewer behaviours at time 1 and time 2

<table>
<thead>
<tr>
<th>Interviewer behaviour</th>
<th>EPITs vs Controls (Time 1)</th>
<th>EPITs vs Controls (Time 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U</td>
<td>P</td>
</tr>
<tr>
<td>Open questions</td>
<td>30.00</td>
<td>0.41</td>
</tr>
<tr>
<td>Closed questions</td>
<td>23.50</td>
<td>0.15</td>
</tr>
<tr>
<td>Number of utterances</td>
<td>23.50</td>
<td>0.15</td>
</tr>
<tr>
<td>Accessible reasoning</td>
<td>37.00</td>
<td>0.83</td>
</tr>
</tbody>
</table>

** p<.01
Table 4.14 Wilcoxon scores for within group comparisons of interviewer behaviours at time 1 and time 2

<table>
<thead>
<tr>
<th>Interviewer behaviour</th>
<th>EPITs (Time 1 vs Time 2)</th>
<th>Controls (Time 1 vs Time 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W</td>
<td>P</td>
</tr>
<tr>
<td>Open questions</td>
<td>49.50</td>
<td>.02 *</td>
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<tr>
<td>Closed questions</td>
<td>46.50</td>
<td>.05 *</td>
</tr>
<tr>
<td>Number of utterances</td>
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<td>.20</td>
</tr>
<tr>
<td>Accessible reasoning</td>
<td>55.00</td>
<td>.01 **</td>
</tr>
</tbody>
</table>

* p<.05
** p<.01
Table 4.15  Correlations between interviewer behaviour of participants and problem-analysis quality at time 1 and time 2

<table>
<thead>
<tr>
<th>Problem-analysis quality</th>
<th>Interviewer Behaviour</th>
<th>Time 1</th>
<th>Time 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Open questions</td>
<td>Closed questions</td>
<td>Number of utterances</td>
</tr>
<tr>
<td>Accuracy of aspects</td>
<td>-0.03</td>
<td>0.15</td>
<td>0.53</td>
</tr>
<tr>
<td>Completeness of aspects</td>
<td>-0.49</td>
<td>-0.02</td>
<td>0.27</td>
</tr>
<tr>
<td>Clarity of aspects</td>
<td>-0.45</td>
<td>0.25</td>
<td>0.24</td>
</tr>
<tr>
<td>Agreement with experts</td>
<td>-0.31</td>
<td>0.30</td>
<td>0.35</td>
</tr>
<tr>
<td>Argument for priorities</td>
<td>-0.45</td>
<td>0.27</td>
<td>0.27</td>
</tr>
<tr>
<td>Argument for causes</td>
<td>0.06</td>
<td>0.16</td>
<td>0.45</td>
</tr>
<tr>
<td>Specificity of next steps</td>
<td>0.01</td>
<td>0.26</td>
<td>0.33</td>
</tr>
<tr>
<td>Appropriateness of next steps</td>
<td>0.22</td>
<td>0.30</td>
<td>0.10</td>
</tr>
<tr>
<td>Completeness of next steps</td>
<td>0.23</td>
<td>-0.08</td>
<td>-0.06</td>
</tr>
<tr>
<td>Total score</td>
<td>-0.16</td>
<td>0.29</td>
<td>0.41</td>
</tr>
</tbody>
</table>

* p<.05
(Bonferroni correction applied of p<.00125)
Data collected **provided support** for the following hypotheses:

3.1. That there would be a significant difference between EPITs and controls in the quality of their written problem analyses, with EPITs obtaining significantly higher overall ratings than the control group at the end of training;

3.2. That the nine problem-analysis subscales would correlate highly with the overall quality score, thus supporting the use of the total score in analyses.

Data collected **partially supported** the following hypothesis:

3.3. That the nine problem-analysis subscales would correlate highly with each other, therefore supporting the view that the problem-analysis measure (based upon Robinson and Halliday's (1988) scale) provides a valid means of assessing problem understanding.

A further research question asked of the data was:

2. How do EPITs rate the quality of their problem analyses?

Data collected **did not** provide support for the following hypothesis:

2.1. That there would be a significant difference between EPITs and controls in their self-ratings of their problem-analysis quality by the end of training with the EPIT group's ratings being more closely related to their actual scores.

### 4.4.3. The relationship between selected interviewer behaviours and quality of problem understanding

Table 4.11 presents the intercorrelations between the four interviewer behaviours measured at time 1 and time 2. It was found that there were no significant correlations between any of the interviewer behaviours at either time 1 or at time 2. These results would suggest that the measures were actually independent of each other and assessing separate facets of interviewer behaviour. Therefore, participants who were using high numbers of open questions did not necessarily use high numbers of accessible reasoning statements or vice-versa.

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In the following sections results are presented on the relationship between the four types of interviewer behaviour assessed, and the subsequent quality of written problem-analyses. The first section examines the efficacy of open questioning, the second closed questioning, the third the number of interviewer utterances, and finally the relationship between interviewer use of accessible reasoning.

4.4.3.1. Use of open questions

Use of open questions at time 1
Table 4.12 presents a comparison of medians and interquartile ranges for both groups on the percentage of open questions asked during the initial teacher interview. Results indicate that the EPIT and control groups asked about the same number of open questions at the start of the study (EPIT median = 16%, control median = 13%). Table 4.13 shows between group analyses (Mann-Whitney), which indicate that there were no significant differences between the two groups in terms of the percentage of open questions asked.

Use of open questions at time 2
Table 4.12 shows that nine months later, both the EPIT and control groups are using higher numbers of open questions (EPIT group median = 26%, Control group median = 22%). Table 4.13 presents the results of between group analyses (Mann-Whitney), which suggests that this difference was not actually significant. However, Table 4.14 presents the results of within group analyses (Wilcoxon), and shows that the EPIT group was asking significantly more open questions than they had at time 1 (EPIT group w = 49.50, p < .024). Results for the control group were not found to be significant, but were close to significance (w = 31.00, p < .06).

The relationship between open questioning and problem-analysis quality
Table 4.15 presents the correlations between interviewer use of open questions and their subsequent problem-analysis quality. Results show that at both time 1 and again at time 2 there were no significant relationships observed. Given these results it is reasonable to conclude that the increased use of open questions is not on its own sufficient to assist an interviewer gain a high quality understanding.
4.4.3.2. Use of closed questioning

Use of closed questions at time 1
Table 4.12 presents a comparison of medians and interquartile ranges for both groups on the percentage of closed questions asked during the initial teacher interview. Results presented in Table 4.13 indicate that though the EPIT group asked more closed questions than did the control group at the start of the study, this difference was not significant.

Use of closed questions at time 2
Table 4.12 shows that nine months later the EPIT group were asking less closed questions during their initial teacher interviews than the control group, who were actually asking more. Results presented in Table 4.13 indicate that these differences were not significant. However, results presented in Table 4.14 show that the EPIT group was actually asking significantly less closed questions than they had at the start of training.

The relationship between closed questioning and problem-analysis quality
Table 4.15 presents the correlations between the use of interviewer-closed questions and subsequent problem-analysis quality. Results show that at both time 1 and again at time 2 there were no significant relationships found. Given these results it is reasonable to conclude that the use of closed questions is not on its own sufficient to assist an interviewer in gaining a high quality understanding.

4.4.3.3. Number of interviewer utterances

Number of interviewer utterances at time 1
Table 4.12 presents a comparison of medians and interquartile ranges for both groups on the number of interviewer utterances used during the initial teacher interview (EPIT group median = 55, control group median = 62). Results presented in Table 4.13 indicate that this difference was not significant.

Number of interviewer utterances at time 2
Table 4.12 shows that nine months later, both groups had decreased the frequency of interviewer utterances asked during the initial teacher interview (EPIT group median =
42, Control group median = 37). Table 4.13 shows that these between group differences were not significant. However, Table 4.14, presents the results of within group analyses (Wilcoxon), and suggests that the control group used significantly less utterances than they did at the start of the study (w = 36.00, p < .012). Results for the EPIT group were not significant, suggesting that the EPIT group did not change in the number of utterances asked during initial teacher interviews.

The relationship between number of interviewer utterances and problem-analysis quality
Table 4.15 presents the correlations between the number of interviewer utterances made and subsequent problem-analysis quality. Results show that at both time 1 and time 2 there were no significant relationships found.

4.4.3.4. Use of accessible reasoning statements

Use of accessible reasoning statements at time 1
Table 4.12 presents a comparison of median and interquartile ranges for both groups on the percentage of accessible reasoning statements used during the initial teacher interview. Results for both groups indicate that accessible reasoning represented an extremely small percentage of the total number of interviewer utterances. The EPIT and control groups used about the same median percentage of accessible reasoning statements at the start of study two (EPIT group median = 0%, control group median = 0%). Table 4.13 presents the results of between group analyses (Mann-Whitney), and, as expected, shows that there was no significant difference between the two groups.

Use of accessible reasoning statements at time 2
Table 4.12 shows that, nine months later, there had been a significant increase in the EPIT group's use of accessible reasoning statements, as a percentage of their overall number of utterances. The control group's percentage remained unchanged (EPIT group median = 14%, control group median = 0%). Results of between group analyses (Mann-Whitney), presented in Table 4.13, suggest that this difference between the groups is significant (u = 0.00, p < 0.01). Within group comparisons (Wilcoxon), outlined in Table
4.14, show that the EPIT group was using significantly more accessible reasoning statements at the end of training than they had at the beginning. This result is hardly surprising given that the EPITs, as opposed to the controls, had just completed a training programme in which they were directly taught and had practised accessible reasoning (and related skills, such as how to undertake an initial teacher interview, plan and monitor interventions).

The relationship between accessible reasoning and problem-analysis quality

Table 4.15 presents the correlations between the use of accessible reasoning statements and subsequent problem-analysis quality. Results show that at time 1 there were no significant relationships observed. At time 2 a very different pattern of results was evident with interviewer use of accessible reasoning being significantly related to all but two of the subscale measures and the overall problem-analysis score. Accessible reasoning was not significantly related to "Accuracy", and "Appropriateness of next steps". Given this pattern of results, it is reasonable to conclude that the use of accessible reasoning is of great relevance to an interviewer's ability to reach a high quality understanding of a teacher's problem situation.

Summary of hypotheses

The research question asked of the data at time 1 was:

4. During an initial teacher interview, is it the frequency of open or closed questioning, the amount of interviewer utterances, or the use of accessible reasoning, that best predicts the achievement of a higher quality understanding of a teacher's presenting problem?

Data collected provided **full support** for the following hypotheses:

4.1. That there would be no significant difference between EPITs and controls in their use of open and closed questions, amount of talk, and of accessible reasoning, at the start of EPIT training, with both groups using more closed than open questions, having similar frequencies of talk, and low levels of accessible reasoning statements;
4.2. That at time 1 there would be no significant relationships between the four-selected interviewer behaviours and the quality of problem understanding.

The research question asked of the data at time 2 was:

4. How does EPITs' use of open and closed questioning, amount of talk, and accessible reasoning change during the course of training, and are these changes related to improved problem-analysis quality?

Data collected provided full support for the following hypotheses:

3.1. That at the completion of training EPITs' use of open questions would be significantly higher than at the start of training. Controls' use of open questions would remain unchanged;

4.2. That at the completion of training EPITs' use of closed questions would be significantly lower than at the start of training. Controls' use of closed questions would remain unchanged;

4.4. That there would be a significant difference between EPITs and controls in their use of accessible reasoning statements, with EPITs using significantly higher percentages of accessible reasoning statements than the control group during interviews at the end of training;

4.5. That the frequency of open and closed questions and the amount of interviewer utterances would contribute little to the explanation of the quality of written problem analyses in both the EPIT and control groups;

4.6. That a significant amount of the variance in written problem-analysis quality would be related to the frequency of EPITs' use of accessible reasoning during the course of initial interviews conducted at the end of training.

Data collected did not support the following hypothesis:
4.3. That at the completion of training the number of EPIT utterances would be significantly lower than at the start of training. Controls' number of utterances would remain unchanged.

In fact, even though the number of EPIT utterances had decreased over time 1 levels, this difference was not significant. A significant within group difference was found for the controls, with their number of utterances being significantly lower than time 1 levels. There were no significant between group differences found.

4.5. DISCUSSION

4.5.1. Participants' perceptions of the interview task and content

Elstein et al (1990) showed that a problem solver's (interviewer's) behaviour can vary greatly depending upon the structure and context of a given task. In this study, interviewers were given the same teacher problem at time 1 and time 2. To increase the face validity of the task a different teacher (actor) and character names were used at time 2. For ethical and research reasons an actor was used to simulate a real initial teacher interview rather than using a teacher. Although this strategy greatly enhances experimental control, such an approach raises questions about the skill and convincingness of the actor (i.e. the face validity of the task). Results indicated that at both time 1 and time 2, both the EPIT and the control groups viewed the actor to be very convincing and very realistic.

The use of only one case biography and resultant model problem analysis, superficially altered between tasks (i.e. changing all relevant names), raises questions about the degree to which the type of case used was unusual or unfamiliar to the participants (i.e. the external validity of the tasks). Results indicated that, before training, both groups found the case to be difficult, complex and not familiar to them. As predicted following training the EPIT group viewed certain aspects of the case differently to the controls. By the end of training EPITs and controls still found the case to be complex, but the EPIT group now perceived the case to be more familiar and less difficult to them.
This result was not surprising given that the EPIT group had just completed a course training them to work with teachers with similar types of presenting problems. Overall these results provide support for the validity of the simulation task, and argue that for research purposes the case provided a suitable means of exploring problem understanding.

4.5.2. Relationship between selected interviewer behaviours and quality of problem understanding

The results of this study showed that the use of open and closed questions, and the amount of interviewer utterances were not significantly associated with an interviewer's ability to gain a high quality understanding of a teacher's problem. Following a period of training, in which interviewing and problem-solving skills were directly taught there was a significant change in the balance of interview strategies used by EPITs when attempting to gain an understanding of a teacher's problem. At the end of training EPITs used significantly more open questions, significantly less closed questions and significantly more accessible reasoning statements. Results showed that it was the use of accessible reasoning statements alone that was significantly related to higher quality problem analyses.

This study showed that people in general, and those about to embark upon training as educational psychologists, do not naturally use accessible reasoning statements in their dialogues with teachers. At the commencement of training the use of accessible reasoning by EPITs and controls was extremely limited. Following a period of training EPITs use of accessible reasoning had significantly increased over baseline levels. Accessible reasoning was still a relatively low frequency behaviour when compared with the other strategies. However, the results suggest it to be an important interview strategy if gaining a quality understanding of a teacher's problem was intended. On the other hand improvements in both accessible reasoning and problem-analysis quality could be due to other unmeasured factors. These results also provide some cautious support for the effectiveness of the approaches used to teach accessible reasoning and problem-analysis skills.
4.5.3. Part replication and extension of Robinson and Halliday's research on accessible reasoning

One of the aims of this study was to attempt to replicate Robinson and Halliday's (1988) finding regarding the central role played by accessible reasoning in predicting the quality of problem understanding derived by an interviewer from a teacher interview. The results reported within this chapter make it clear that interviewers' use of open questions, closed questions, and the number of interviewer utterances were not particularly helpful ways of predicting the subsequent quality of an interviewer's understanding. It is obvious that these strategies are a necessary, but not significant, condition for the interviewer to obtain teacher data. What appears to make a significant difference is what the interviewer does with this information via accessible reasoning that is most relevant to obtaining a high quality understanding of a teacher's problem.

Despite the fact that the problems referred or presented to educational psychologists (and psychologists in general) can be characterised by a lack of an obvious solution, many possible routes to a solution, and by uncertainty about what information is relevant, it was argued that a high quality understanding would be complete, well argued and true to the facts of the case. Analysis of the results using Robinson and Halliday's scale showed that their measure of problem-analysis quality was highly reliable and conceptually consistent. The nine subscale criteria and the overall total score related to each other, and to the process measures in ways, which were consistent with their theoretical formulations. The results of this study confirmed that Robinson and Halliday's scale could be reliably used to evaluate the consequences of various interviewer behaviours. In fact, for research purposes there is evidence suggesting that the total problem-analysis score alone is a valid and reliable summary of quality of understanding.

This study is, at the time of writing, the only one which has systematically sought to find a relationship between accessible reasoning and problem understanding within the arena of applied educational psychology. This study is also one of a few to adopt a longitudinal design. Previous studies (Elstein et al, 1990) have used oral reports from participants to explain the thinking that was going on during an interview or task by either stopping the process and asking directly or waiting until afterwards and relying
upon participants' memory. The results show, within the context of an initial teacher interview, that reasoning can be measured directly from the interviewer's actual verbal behaviour, and thus overcomes many of the limitations of memory and subjective reconstructions.

4.6. LIMITATIONS OF STUDY TWO

Leedy (1980) stresses that one of the "axioms of research is that any research effort should be replicable; that is, it should be able to be repeated by any other researcher at any other time under precisely the same conditions" (p.74). The fundamental purpose of the quasi-experimental design used in this study was to impose control over conditions that would otherwise obscure the effects of the independent variables upon the dependent variables. In the following section factors which could have affected the study are discussed. Most of the factors highlighted are of greater relevance to quasi-experimental designs than to true experiments where random assignment to treatments occurs, and where both treatment and measurement can be more adequately controlled by the researcher.

In critiquing study two, the following questions unify this section, first "did training, in fact, make a difference in the specific areas under scrutiny?", and "given the demonstrated effects, to what populations or settings can they be generalised?". In making a judgement as to what weight to place upon the results of this study a range of issues will be highlighted which may have affected the validity, reliability, and ultimately the generalisability of the results. Conversely, on other criteria it is argued that study two has presented evidence of defensible research practice; for example, in the explicit description and definition of variables, in the adequate operationalisation of dependent variables, and in the various attempts to randomise any spurious effects between groups by the provision of a validated model problem analysis, the use of standard procedures, and the application of rigorous statistical procedures.
4.6.1. Issues to consider

Sample size
The most obvious, and arguably the most significant constraint of study two was the relatively small size of the sample used. A small sample size could have affected the results in the following ways:

**Statistical significance**
Small numbers of participants in a study reduce the power and generalisability of any statistical tests used. In addition, statistical regression effects increase with the interval of time between the measurements made at time 1 and time 2. Statistical regression occurs in research because of the unreliability of measuring instruments, and other extraneous factors unique to each study (i.e. noise levels, temperature, season, and so on).

Regression effects result in a tendency for participants who scored highest at time 1 to score slightly lower at time 2, and vice versa. In pre-post design studies there is a regression to the mean effect, which can lead researchers to mistakenly attribute post gains or losses to low or high scoring respectively. The results of the intercorrelational tests showed the reliability of the dependent measures used (i.e. problem-analysis measure). This set against the rigorous statistical tests used would challenge the importance of regression effects.

**Maturation**
Between any two measurement points participants change in a variety of ways. Such changes can produce differences that are, in fact, independent of the experimental intervention. Given that the interval between time 1 and time 2 was about nine months, maturation effects could have been a concern. The EPIT group was involved in an intensive training course where they were expected to change in a wide range of areas, as they made the transition from thinking as teachers to thinking like applied psychologists. The use of a control group did provide a means of measuring any change, and attributing it to the effects of the shared training course. Though a concern, maturation as a significant factor in limiting the study's efficacy is challenged.
Representativeness of sample

Study two attempted to collect data on the development of interviewing and problem-solving skills in a group of EPITs in one training programme within the United Kingdom. An important question was whether this group of EPITs, and the results obtained, were generalisable to other courses and EPITs. As outlined in study one, within England, Wales and Northern Ireland there are 14 university based-training programmes which taught, during the study period, about 224 EPITs. Based upon these factors study two represented 7% of training courses, and 7% of EPITs being trained. Given that interview criteria and procedures vary from course to course and without any comparative information of courses' selection data available, it is unclear whether a candidate selected by one course would also have been selected by another. It could well be that the EPIT sample was not, in fact, representative of the types of people selected onto other courses; equally they may well have been. Study two assumed that the sample of EPITs was representative of the larger population, and that the results were generalisable.

Selection bias - comparability of EPIT and control groups

In the training year in which the study was conducted, a total of 44 people were interviewed for 16 training places which were available. Following interviews all candidates were ranked ordered (from 1 to 44). Of the 44 people interviewed 31 were seen as being suitable for training. The first eight place holders were given funded places, and the remaining eight places were unfunded. Of this group of 16, 10 EPITs were randomly selected to take part in the study, eight were funded, and two were unfunded. This represented a sample of 63% of the course group. The control group, on the other hand was taken from the remaining set of people who had been offered unfunded places, but had chosen for various reasons not to take up the offer. The control group represented 53% of this group of 15.

Clearly the EPIT group consisted predominantly of people who had been rank ordered within the top eight places. The assumption here is that this group was perceived as being clearly more able on the selection criteria, assessed through interview, than the other candidates. The control group on the other hand was made up of people covering
a much wider range of rank ordered positions. So, the two groups did differ in terms of the rank order position of its members on the basis of the interview selection task. One possibility is that the EPIT group were superior on a range of interpersonal skills that enhanced their interview performance whether as interviewees or interviewers. This possibility is investigated in study two (a), which is reported in the next chapter.

With hindsight perhaps the use of rank ordered position, as a criteria for comparing groups may have been valuable, and would have shown a significant difference between the groups. It could be argued that this inherent difference between the groups meant that they were not actually comparable at time 1, in a very important aspect and that this difference could have been responsible for the outcomes observed. Perhaps interpersonal effectiveness skills which were important interview criteria for the UCL course and contributed significantly to interviewee's rank ordered position could have been key elements to effective interviewing and problem understanding.

However, it is interesting to observe that from the group of controls the four teachers' who wished to train as educational psychologist in the year following participation in this study did obtain places (3 were funded and 1 was unfunded). This would indicate that interpersonal skills were acceptable at least in the year following involvement in this study. In addition on all the measures (except first degree honours level) the two groups did not differ in terms of interview strategies used, level of accessible reasoning and quality of problem analyses. Comparability between the two groups on rank ordered position, given the complexity of the subject matter and the limited sample size is acknowledged as being a weakness in the design of this study.

The issue of comparability raises conceptual difficulties in that to have randomised the effects of rank ordered position within one training course, and to have constructed a suitable control group, would have been difficult if not impossible. With hindsight, as the main purpose of this study was a part replication and extension of previous research looking at the development over time of initial interview skills, and their relationship to problem understanding, and not a comparison study of training courses, then other designs were possible - for example, alternative experimental and applied behaviour analysis designs (e.g., treating the EPIT group as a set of independent participants who acted as their own control, by using a simple ABC design, where A is
baseline, B intervention, and C is reassessment), or collecting a sample of EPIT's from a number of other courses and studying their development over the training year.

**Sensitisation to experimental conditions**

Study two involved presenting participants with exactly the same teacher problem at time 1 and again at time 2. In an attempt to increase the face validity of the task a different actor was used at time 2, along with a complete change of identifying features, such as names. It was assumed that any practice effects resulting from having gone through the case at time 1, would have been the same in both groups, and weakened by the passage of time between tasks. Though a concern, sensitisation to experimental conditions, as a significant factor in limiting the study's efficacy is questioned.

**Hawthorne effect**

The Hawthorne effect describes the degree to which participants' behaviour is influenced by the mere fact of participating in a research study. In study two the participants' experiences of undertaking an initial interview, as if they were an educational psychologist, and the processes of thinking and writing a problem analysis may well have affected how they approached the task at time 1, and altered how they behaved at time 2. All of the control group intended to reapply for educational psychology training, and may have seen involvement in the study as enhancing their chances of gaining a funded place.

Study two was interested in how people went about conducting initial teacher interviews, and reaching an understanding of complex problems, in an as realistic an environment as possible. Paradoxically as the participants knew that they were being watched, recorded, and had post-interview tasks to do, they may well have altered their behaviour (either consciously or unconsciously). Ironically, the "normal" behavioural processes that the researcher wanted to observe and sample may well not have occurred because of their very presence!

The post-interview tasks, and in particular the problem-analysis questions may well have led participants to answer in ways that they thought the researcher wanted, or to state opinions, and give rationales which they thought socially acceptable and pleasing.
(or not) to the researcher. Despite these cautions, the Hawthorne effect, as a significant factor in limiting the study's efficacy is questioned.

**General design and single task**
Alternative designs for study two were investigated and critiqued - for example, presenting two separate, yet comparable cases at time 1 and 2, using a split random design (e.g., half the participants were presented with case one at time 1, half the participants were presented with case two at time 1, and the reverse for time 2) (Barlow & Hersen, 1984). This design would have involved considerable extra demands, for example, testing out that the two case studies were in fact comparable and of similar difficulty. This design would certainly have randomised any practice effects, however the intention of the study was to investigate change over time in a group of EPITs who were involved in a training programme which stressed interviewing and problem-solving skills. As such what was interesting was how EPITs approached case details, and how their strategies developed over time when presented with the same case detail at the beginning and end of training.

**Rater and coder bias**
Within the design of study two, all of the participant outcome measures (e.g., transcript of initial interviews, and written problem analyses) were rated and coded by the researcher. Within the constraints of the resources available to the researcher, attempts were made to reduce any obvious source of bias. For example, all interviews were transcribed by a research assistant, and typed in a standard format, each transcript had a front sheet with the participant's code and phase number, for the purposes of rating and coding the front sheet was stapled together, thus making the transcripts anonymous. Finally, 33% of transcripts and problem analyses were second rated/coded by a colleague who was not familiar with the study's design or purpose. The independent inter-rater/coder reliability scores were all above 70%. This result gave some confidence that any researcher bias was in actual fact minimal.

However, it was the ratings/codings of the researcher which were ultimately used in all statistical analyses. More subtle biasing effects were not attended to. For example,
the researcher was present, and recorded all the interviews, and read and rated/coded all of the transcripts. It is possible, though unlikely, that he could have recalled elements from the interviews, which could have identified participants (i.e. EPIT or control), and thus led to possible subtle biasing effects (either inflating or deflating scores).

With hindsight many of these potential biasing effects could have been more rigorously addressed by either getting all the transcripts rated/coded by an independent colleague (second checked again by another colleague), or by getting the second rater/coder to complete all the transcripts, in addition to the researcher. If this had been done then the median scores of the raters would have been used for all subsequent analyses. However, given the resources available for study two and the very real attempts to attend to the most obvious sources of rater/coder bias, though a concern, as a significant factor in limiting the study's efficacy this is questioned.

4.7. CONCLUSIONS
The results obtained provide support for the role that accessible reasoning plays in solving complex and ill-structured problems of the type that educational psychologists are presented with. Following a nine-month period of intensive and rigorous training to be educational psychologists, those EPITs who employed accessible reasoning (i.e. shared what they were thinking about the teacher data, provided the reasons for why they thought what they did, and checked their reasoning out with the teacher) also obtained significantly higher ratings for their subsequent written analyses of the teacher's problem.

Before training, EPITs and controls at both time 1 and time 2 did not naturally use significant levels of accessible reasoning (or an explicit hypothesis-testing approach) even though they knew that they would be required to write a problem analysis in which they would have to identify specific problem areas, causal relationships and be able to defend their views. EPITs and controls, when required to make decisions about the relative importance of teacher data, either went with the teacher's views regarding priorities or applied personal preferences to give meaning to what they were doing. At the end of training EPITs were significantly more likely to employ accessible reasoning within an explicit hypothesis-testing framework during the interview and attempted to
identify the teacher's perceptions of their problem, share their own views and involve the
teacher in checking the efficacy of both of these.

Approaches to initial teacher interviewing (and interviewing in general) which do
not stress such processes but encourage interviewers either to accept the teacher's
perceptions without challenge or to impose the interviewer's untested perceptions of the
problem onto the teacher may not be as effective. The use of accessible reasoning is one
way of avoiding this. When first working with EPITs in exploring accessible reasoning
there is often confusion and resistance. Part of this tension may be due to EPITs seeing
accessible reasoning as "saying whatever comes into your head". Such behaviour, though
it would indeed be accessible to the teacher, would be unhelpful. In this research an
interviewer's utterances were only coded as accessible reasoning statements if they were
based clearly on teacher data or case relevant argument. Accessible reasoning was
defined as, any interviewer utterance which expressed an understanding or interpretation
of some aspect of the client's data, supported by relevant evidence or argument. In this
way the teacher has a real chance to learn from or to critique the interviewer's reasoning
about them. An EPIT who shares their thinking which is not based on information
provided by the teacher, or case relevant argument, is likely to engender defensive
strategies on the part of the teacher, and within themselves.

In contemporary educational psychology practice there are at least two views,
presented here in extreme form, regarding how educational psychologists should go about
working with teachers on their presenting problems. One view assumes implicitly that
it is the educational psychologist's task to take the responsibility for solving the teacher's
problem. The other view implicitly sees the educational psychologist's task as one of
encouraging teachers to solve their own problems. The findings of study two would
appear to challenge both positions.

4.7.1. Educational psychologists as solvers of teacher problems
Many consultation and interview frameworks espouse at an applicable knowledge level
that the educational psychologist-teacher relationship is about understanding,
empowerment and equal power relationships (Gutkin, 1999). Yet most of these
frameworks are not particularly helpful in specifying in actionable knowledge terms
exactly what skills and strategies are needed to achieve such outcomes or reaching an understanding. It is likely that unintentionally the educational psychologist-teacher dialogue will largely involve covert strategies and processes (i.e. consistent with Model I governing principles and strategies). As a result there will be limited opportunities for the teacher to confirm or challenge interviewer assertions or judgements. A problem-solving interview may have occurred at an espoused level, but it is likely that the interviewer's understanding will be of a lower quality. Unfortunately it will be this lower-quality construction that will be used to design and evaluate any intervention (Argyris, 1982; Gutkin, 1999; Erchul, 1999).

This view of the educational psychologist as a solver of teachers' problems is similar to Wright et al's (1995) continuum view of educational psychology practice. At one end of their continuum the educational psychologist acts as a "specialist investigating within-child difficulties without taking into account context, for the purpose of labelling the problem and prescribing a treatment programme for another person, not involved in the assessment, to carry out" (p.7). In study two to be effective, that is gain an accurate understanding of the teacher's problem, the interviewer had to share their thinking and reasoning with the teacher. This thinking was presented in the form of tentative hypotheses, and shared in ways that enabled the teacher to either confirm or disconfirm their accuracy and completeness. Interviewer assertions which were not based on teacher data or relevant case material were not coded as accessible reasoning statements. Accessible reasoning within this research measured the degree to which an interviewer was able to involve the teacher in the process of formulating a problem analysis. This contrasts with the extreme view (Wright et al's 'specialist') that the educational psychologist decides in a covert way what the teacher's problem is and how it should be solved.

### 4.7.2. Educational psychologists as facilitators of teachers solving their problems

At the other end of the continuum effective practice is seen as the educational psychologist facilitating or enabling the teacher to solve their own problems (Gutkin, 1999). Many practitioners may spend the initial interview session (and subsequent meetings) exploring and probing the teacher's own beliefs about the events which led
them to seek help or the consequences of such beliefs upon them, or arbitrarily highlighting positives and specifying goals without adequate analysis. This view of the educational psychologist as a facilitator of teachers solving their own problems is again similar to Wright et al's (1995) continuum view of educational psychology practice. At the other end of their continuum the educational psychologist is a facilitator who "helps teachers and parents to clarify the problematic situations they are facing with children, and to become involved in the direct assessment of the learning conditions experienced by the pupil, so that they can jointly agree objectives to be achieved and the strategies for achieving them" (p.7). As with other frameworks Wright et al's model does not specify how such outcomes are to be achieved, or what strategies or processes are important.

In contrast with this view, assisting a teacher to learn involves more than facilitating, it involves explaining to them how their perceptions of the problem situation do not take into account other pieces of information or are incomplete. In the initial interview situation the interviewer assists the teacher's learning by making their reasoning accessible, and encouraging the teacher to compare their views with that of the interviewer to see whether they are similar or different. This mutual inquiry is the first phase of the process of jointly formulating an accurate understanding of the problem.
CHAPTER FIVE

STUDY TWO (A): The relationship of interviewer personality and communication style to perceptions of the interview task, self-ratings of problem-analysis quality, interview strategies used and problem-analysis quality

5.1. RATIONALE FOR STUDY TWO (A)

On the basis of the results obtained from study two, it was hypothesised that the use of accessible reasoning was positively related to an interviewer's ability to reach a high quality understanding of a teacher's presenting problem situation. However, correlation does not imply causation, and the observed significant increase in accessible reasoning, and the associated improvement in problem-analysis quality could have been related to other factors. For example, Elstein et al (1990) and Goodyear (1997) summarise research which has shown that people's personality characteristics are correlated with how they go about the process of inquiry.

It could be that the degree to which EPITs are willing (or able) to use accessible reasoning during initial interviews, when so taught, might be related to the degree to which they are sociable, open to new ideas, independent, risk takers, and the degree to which they focus upon detail, apply themselves, and perceive themselves as open communicators, empathetic and supportive. These various factors can be grouped together under the headings of personality and communication style characteristics (Costa & McCrae, 1987, 1992; McManus et al, 1997).

The rationale for undertaking study two (a) was to investigate whether participants' personality and personal communication style characteristics added anything to our understanding of the factors related to an interviewer's ability to gain a high quality understanding of a teacher's problem. Information was also collected on the relationship between participants' personality and communication style, and their perceptions of the interview task, self-ratings of their problem-analysis quality and the use of various interview strategies, derived from study two. This was done to investigate whether such factors influenced a participant's ability to form accurate perceptions of their own
5.1.1. Personality and communication style as explanatory variables

Within psychology those studying individual differences can be divided into two main groups, those who investigate individual differences with regard to psychological processes such as problem-solving and information processing (as seen in study two), and those who focus upon studying a range of personality traits and communicative styles. These two strands have, until recently, worked in isolation using different methodologies and theoretical perspectives. Recent developments within cognitive psychology have indicated that individual differences in social perception and information processing may offer another way of viewing personality, that is, as a set of "cognitive information processing styles" (Sternberg, 1995).

Research from cognitive psychology suggests that people use a number of cognitive strategies to try to make sense of interpersonal encounters. Often these strategies are not particularly rational nor are they applied systematically. The evidence suggests that people interpret the same information in different ways, in part because everyone uses slightly different strategies to process and construct meaning. Sternberg (1995) refers to such strategies as 'cognitive styles'. The difference between cognitive style and personality is that cognitive style can represent a strategy that can be defined in terms of some outcome, whereas as personality is usually seen as a more global description. For example, a person who consistently employs an impulsive rather than reflective style during information gathering and processing tasks could be viewed by a personality psychologist as having an impulsive personality. Cognitive styles are seen as being more flexible and amenable to change, whereas personality is seen as a fixed disposition. Within this chapter communication style is seen as being related to personality dispositions. However, as with the distinction between cognitive style and personality, a person's communicative style is more open to modification and change.

One of the main challenges to cognitive style research is that it has tended to be descriptive rather than explanatory, and to have weak predictive validity. Although the research has identified a range of cognitive strategies which people use during information processing, there is little discussion as to why they use particular approaches,
and whether people can be effectively taught different ways of responding. In the field of educational psychology, there have been successful attempts to teach children to be more reflective than impulsive in their approach to learning tasks, as a reflective approach appeared to be related to positive school attainments (Brunas-Wagstaff, 1998; Jamieson, 1992).

Personality psychology proposes explanations in the form of the processes, which underlie the various classifications of personality traits. In this study two measures were used which were consistent with this approach because the explanatory model used in study two was from the other strand - information processing and cognitive psychology. The challenge with these approaches is that a lot of this research can appear overly deterministic, in that it implies that an individual's disposition to respond in particular ways is "set" from birth.

5.1.2. Measuring personality characteristics and communication style

Despite conceptual differences there is a growing body of research, which highlights a consistent set of personality factors derived from factor analytic studies. There appears to be a consensus within the literature that five factors may provide the best description of human personality (McCrae & Costa, 1987). Though the labelling of these factors differs slightly from study to study, the five factors are extroversion (or assertiveness or impulse expression), agreeableness (or warmth or docility), conscientiousness (or will to achieve), emotionality (neuroticism) and intellect (or openness to experience). McCrae and Costa (1992) developed a measure of these, which is commonly called the "Big-Five" Personality Inventory (NEO-FFPI).

All trait-based models assume that personality dispositions are consistent and stable over time. The assumption is that if you know someone's personality, you should be able to predict the probability that certain approaches will be adopted. For example, an extrovert would tend to be more sociable, impulsive and sensation-seeking than a more introverted personality. We would not expect, within this model, for an introvert to be extrovert in some contexts and not in others. For personality to have any real value as a predictor of behaviour, consistency is crucial. It is important because it has implications for how useful the assumption is that a stable set of personality variables
explains performance rather than employing more cognitive or behavioural explanations (as used in study two). From a training perspective it may be more helpful to view personality as a background variable which may or may not make learning particular cognitive skills (such as problem-analysis, interviewing and accessible reasoning) more or less difficult.

McCrae and Costa (1992) believe that earlier criticisms of personality trait psychology as being either "simplistic descriptions" of little applied use or "cognitive fictions" are now refuted, in part because of biological evidence regarding the heritability of personality traits. However, the Big Five still fails to provide compelling causal explanations for human behaviour and experience, and it disregards the context and conditional nature of human behaviour. Despite these reservations the Big-5 measure and the trait framework it embodies is the most widely used measure in the field of personality and occupational psychology. There is also an impressive amount of research on the relationship between a wide range of behaviours and the Big-Five dimensions (e.g., Barrick & Mount, 1996; Buss, 1992; Hart & Hare, 1994).

To many lay people it makes perfect sense to think that the personality of an interviewer could well predict their performance during an interview and in any subsequent analysis they may make about a client's problem. The central question of research in this area has been to find out what personality characteristics actually predict, for example, health and longevity (Friedman et al, 1995), personality disorders and mental illness (Costa & Widiger, 1994), and occupational behaviour (Furnham, 1994). An example of the latter type of enquiry is the research of Barrick and Mount (1991) where they looked at the relationship between the five dimensions of the Big-Five Personality Inventory (Extroversion, Neuroticism, Agreeableness, Conscientiousness and Openness) with three types of job performance (job proficiency, training proficiency and personnel data). The results showed that Conscientiousness was a constant predictor of job performance and Extroversion was associated with jobs involving social interaction and training proficiency. They concluded that personality characteristics were valid predictors of work-related behaviour though the correlations are almost always small.

In Furnham, Crump and Whelan's view (1997) some personality characteristics "are good predictors of job proficiency, but not all are" (p.669). They argue that there are
at least three reasons for this. Firstly, different personality characteristics are associated with different behaviours and if a characteristic is unrelated to a particular behaviour then it is not likely that they will correlate, secondly not all measures are equally psychometrically sound. Thirdly, Furnham et al state that poor correlations may result because of the weakness of measures used to assess occupational behaviour.

Within applied fields, such as medicine, there has also been a growing realisation that effective doctor-patient communication is essential to improving medical practice and patient health (Simpson, Buckman, Stewart, Maguire, Lipkin, Novack & Till, 1991). Individuals differ in their ability to communicate effectively with others, or to large groups (Stewart & Roter, 1989). Within the literature there have been attempts to measure such differences (Stiles & Putman, 1989), although the majority of such measures have relied upon complex and time-consuming observational methods. In addition questions have been raised about the reliability and generalisability of such approaches (McManus et al, 1997).

One of the most well-used questionnaires available for assessing self-perception of communicative ability is the "Communicator Style Measure" (CSM) questionnaire originally developed by Norton (1978). In the original CSM-102 questionnaire 102 items were rated by participants on a 7-point Likert-type scale. The items were clustered under 10 separate constructs. This instrument was further refined into a shorter 50-item version in which items were assessed using a 4-point Likert-type scale.

For medical research purposes McManus et al (1997) devised a shorter 18-item version of the CSM-50, based upon three main constructs - Effective, Dominant and Non-verbal. As with the CSM-50 a 4-point Likert-type scale was used. Study two (a) used the 18-item version as a measure of participants' self-perceptions of their communicative style.

5.2. AIMS OF STUDY TWO (A)
This study investigates whether knowledge of a participants personality and communication style characteristics adds anything to our understanding of the factors involved in assisting an interviewer gain a high quality understanding. Study two
showed that the increased use of accessible reasoning was associated with improved problem-analysis quality. Information was also collected to test out the relationship between personality and communication style and participants' perceptions of the interview task, self-ratings of their problem-analysis quality, and the use of various interview strategies in a group of EPITs near the end of a year long training course.

5.2.1. Research questions and hypotheses for study two (a)

The research questions and hypotheses asked of the data collected were:

Comparability of participants on measures of personality and communication style

1. Are the two groups of participants actually comparable on measures of personality and communication style characteristics?

The specific hypotheses were:

1.1. That there would be no significant difference between the two groups (EPITs and controls) in their personality characteristics;

1.2. That there would be no significant difference between the two groups (EPITs and controls) in their communication style characteristics.

The relationship between personality and communication style to problem-analysis quality and strategies used

A further question asked of the data was:

2. Do personality and communication style characteristics add anything further to our understanding of how EPITs achieve a high quality understanding of a teacher's presenting problem, than exploring/evaluating interviewer use of open and closed questions, number of utterances and accessible reasoning?

The specific hypotheses were:

2.1. That there would be no significant relationship between the personality characteristics of participants and the quality of their written problem analyses;
That there would be no significant relationship between the communication style characteristics of participant's and the quality of their written problem analyses;

That there would be no significant relationship between the personality characteristics of participants and their use of open or closed questioning, number of utterances and accessible reasoning;

That there would be no significant relationship between the communication style characteristics of participants and their use of open or closed questioning, number of utterances and accessible reasoning.

The relationship of personality and communication characteristics to participants' perceptions of interview and problem-analysis quality

A further question asked of the data was:

What is the relationship between personality and communication style characteristics, and participants' perceptions of the interview task, and self-ratings of the quality of their problem analyses?

The specific hypotheses were:

That there would be no significant relationship between participants' personality characteristics, and their perceptions of the interview task, and self-ratings of their problem-analysis quality;

That there would be no significant relationship between participants' communication style characteristics, and their perceptions of the interview task, and self-ratings of their problem-analysis quality.
5.3. METHOD

5.3.1. Participants
The same group of ten EPITs and the 8 controls who participated in study two also took part in this study. The descriptive characteristics of these groups are presented in sections 4.3.4 and 4.3.4.1 of chapter four of this thesis.

5.3.2. Instruments
Two measures were used in this study, the NEO Five-Factor Personality Inventory (Big-Five) (Form S, Costa & McCrae, 1989, 1992), as a measure of personality, and the Norton Communication Styles Measure (Short Form, McManus et al, 1997) as a measure of communication style. Copies of both of these instruments are presented in Appendix three.

1. The NEO Five-Factor Inventory (NEO-FFI)
The NEO-FFI, commonly referred to as the Big-5 Inventory, is a 60-item paper-and-pencil self-report measure developed from the 240-item NEO Personality Inventory (NEO-PI). Conceptually it incorporates the widely used five-factor model of trait personality (McCrae and Costa, 1987). The five factors or characteristics of personality measured by this inventory are Neuroticism, Extroversion, Openness, Agreeableness and Conscientiousness.

2. The Norton Communication Styles Measure (CSM-Short Form)
The Short Form of the Norton developed by McManus et al (1997) consists of 18 items as compared with the 50 items in the original CSM (Norton, 1978). Following a reassessment of its psychometric properties, McManus et al (1997) conclude that the original questionnaire is potentially a useful research instrument, giving information on how individuals perceive their own communication style on a number of separate dimensions. However, they were critical about the psychometric robustness of the original ten dimensions proposed by Norton, and the length of the questionnaire. On the basis of their research, McManus et al (1997) devised an 18-item version, six items in
each of three scales - Effective, Dominant and Non-verbal, selected to give reasonable reliabilities, with none of the items loading on two or more of the scales, and without too much repetition of content.

5.3.3. Procedure
As part of their involvement in the final phase of study two (that is time 2, near the completion of training), both the EPIT and control groups were informed by letter and by telephone about the interview task and the questionnaires they were to complete. In addition to the two main questionnaires used in study two (i.e. Questionnaires B and C), two additional questionnaires were attached (i.e. The NEO Five-Factor Personality Inventory and the Norton Communication Styles Measure). Each participant was given an extra 30 minutes to complete these additional questionnaires. (Copies of these questionnaires are presented in Appendix three.)

5.3.4. Dependent variable measures and scoring procedures
1. NEO Five-Factor Personality Inventory (Big-Five)
The inventory is made up of 60 self-descriptive statements for which the participants used a 5-point Likert-type scale (going from 1 = "strongly disagree", to 5 = "strongly agree") to rate the extent to which each statement best described them. Each of the five personality characteristics consisted of 12 items which were summed (some in reverse order) to form a total score for that area. The five personality areas and scoring procedures are outlined as follows:

a. Neuroticism: this area measured the degree to which participants were emotionally stable. It measured the degree to which a person has a tendency towards negative emotions such as fear, sadness, embarrassment, anger, guilt and disgust. In contrast those scoring lower on this scale would be seen as being emotionally stable, even-tempered, relaxed and able to face stressful situations without becoming upset (Costa & McCrae, 1992, p.14-15).

The Neuroticism scale was derived by summing scores from items, 6,11,21,26,36,41,51,56 and in reverse order items 1,16,31,46.
b. **Extroversion**: this area measured the degree to which participants were sociable, liked other people, liked large groups and gatherings, were assertive, active and talkative. Such people are characterised as liking excitement and stimulation and are usually cheerful in disposition, upbeat, energetic and optimistic. In contrast those scoring lower on this measure would be seen as reserved and independent (ibid, p.15).

The Extroversion scale was derived by summing scores from items 2, 7, 17, 22, 32, 37, 47, 52 and in reverse order items 12, 27, 42, 57.

c. **Openness to experience**: this area measured the degree to which participants had an active imagination, aesthetic sensitivity, attentiveness to inner feelings, preferences for variety, intellectual curiosity, and independence of judgement. Such people are characterised as open individuals who are curious about inner and outer worlds, they are willing to entertain novel ideas and unconventional values and they experience both positive and negative emotions more keenly than less open people. In contrast those scoring lower on this measure would be seen as being conventional in behaviour and conservative in outlook, they prefer the familiar, and their emotional responses are muted (ibid, p.15).

The Openness scale was derived by summing scores from items 13, 28, 42, 53, 58 and in reverse order items 3, 8, 18, 23, 33, 38, 48.

d. **Agreeableness**: this area measured the degree to which participants were fundamentally altruistic, sympathetic to others and eager to assist them, and believe others will be equally helpful in return. In contrast, those scoring lower on this measure would be seen as disagreeable, antagonistic, egocentric, sceptical and competitive (ibid, p.15).

The Agreeableness scale was derived by summing scores from items 4, 19, 34, 49 and in reverse order items 9, 14, 24, 29, 39, 44, 54, 59.

e. **Conscientiousness**: this area measured the degree to which participants were able to resist impulses and temptations, they are purposeful, strong-willed,
determined, punctual, scrupulous and reliable. In contrast those scoring lower would be less exacting in applying themselves, more lackadaisical in working towards goals, and more hedonistic (ibid, p.16).

The Conscientiousness scale was derived by summing scores from items, 5,10,20,25,35,40,50,60 and in reverse order items 15,30,45,55.

Validation studies indicate acceptable total score correlations with the NEO-PI. The larger NEO-PI has been in existence for over ten years with a large amount of research work reported in the literature (McCrae & Costa, 1992). The results of such research indicate consistent support for the validity and reliability of the personality characteristics chosen. In using the Big-Five Inventory some precision is traded for speed and convenience but as with the NEO-PI it has been highly recommended for research purposes (McCrae & Costa, 1992). The characteristics of the inventory were of particular interest in the present study as these have not been used before when investigating interviewing skills and the efficacy of problem understanding in a group of educational psychologists in training.

2. The Norton Communication Styles Measure (short form)

The Norton is a paper-and-pencil self-report measure made up of 18 self-descriptive statements for which the participants used a 4-point Likert-type scale (going from 1 = "describes me very badly" to 4 = "describes me very well") to rate the extent to which each statement best described them. Scoring is straightforward and does not involve any reversals. The three areas and scoring procedures are outlined as follows:

a. **Effective:** described a communicator as "being friendly, effective" "who is relaxed under pressure and leaves an impression on people" (McManus et al, 1997, p.8).

   The Effective scale was derived by summing scores from items, 1,4,7,10,13,16.

b. **Dominant:** described "a communicator as being argumentative, dramatising, speaking a lot and dominating conversations" (ibid).
The Dominant scale was derived from items, 2, 5, 8, 11, 14, 17.

c. **Non-verbal:** described "a communicator as being expressive non-verbally, using face, eyes and gesture to encourage people, and therefore being empathetic and supportive" (ibid).

The Non-Verbal scale was derived from items, 3, 6, 9, 12, 15, 18.

The Norton (short form) has only been in existence for a short period of time, and has not been widely used in applied research. The psychometric properties reported by McManus et al (1997) indicate support for the validity and reliability of the communication characteristics chosen, and its potential as a useful research instrument.

As with the Big Five the characteristics of the inventory were of particular interest to the present study as these have not been used before when investigating perceptions of interviewing skills and the efficacy of problem understanding in educational psychologists in training.

5.3.5. **Statistical analyses**

All data for this study were collected using a series of 1 to 5 (Big-Five measure), and 1 to 4 (Norton) Likert-type rating scales. For the purposes of statistical analyses it was assumed that these measures recorded responses from underlying rank order scales. As a result non-parametric statistics were used (Glegg, 1982; Heyes et al, 1986; Howell, 1989). For all between groups comparisons of medians the Mann-Whitney statistic was used, and for all correlational comparisons the Spearman's Rank Order Correlation statistic was employed.

Because of the relatively small sample size all correlational investigations involved combining the data from the EPIT and control groups. This was done because the purpose of such investigations was to identify patterns within the whole data set, with reference to other tests being made in order to interpret any patterns noted. An alpha level of significance of 0.05 was used; where a different alpha level was employed, this is clearly identified. In addition, the Bonferroni Correction statistic was applied to all correlations involving more than 10 tests of any given data set. This was done because
Table 5.1 Medians and interquartile ranges of EPITs’ and controls’ scores on the Big-5

<table>
<thead>
<tr>
<th>Big-5 Measures</th>
<th>EPITS</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Medians</td>
<td>IQR</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>20.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Extroversion</td>
<td>30.00</td>
<td>8.00</td>
</tr>
<tr>
<td>Openness</td>
<td>35.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>31.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>30.00</td>
<td>6.00</td>
</tr>
</tbody>
</table>
Table 5.2 Mann-Whitney scores for between group comparisons on the Big-5

<table>
<thead>
<tr>
<th>Big-5 Measures</th>
<th>EPITs vs Controls (Time 2)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>U</td>
<td>P</td>
</tr>
<tr>
<td>Neuroticism</td>
<td></td>
<td>11.00</td>
<td>0.01 *</td>
</tr>
<tr>
<td>Extroversion</td>
<td></td>
<td>34.00</td>
<td>0.63</td>
</tr>
<tr>
<td>Openness</td>
<td></td>
<td>32.50</td>
<td>0.51</td>
</tr>
<tr>
<td>Agreeableness</td>
<td></td>
<td>34.50</td>
<td>0.63</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td></td>
<td>25.00</td>
<td>0.20</td>
</tr>
</tbody>
</table>

* p<.05
with such a small sample size there is an increased risk of error associated with the increased number of tests made. The SPSS computer package held on disk at the Psychology Department at UCL (version 7.5) was used for all statistical analyses.

5.4. RESULTS AND DISCUSSION
Kelly (1955) argued that the way a person internally constructs their experiences directly affects the way that they understand those experiences. He showed that if two people were presented with the same or similar interpersonal encounter they would react differently depending upon how they had constructed and interpreted it (Ravenette, 1997). Other research suggests that people are predisposed to construct and interpret data in a range of ways depending upon their personality characteristics, which are assumed to be biologically based (Pervin & John, 1997).

In study two (a) it was hypothesised that how the participants constructed their understanding of the teacher’s problem, during the initial interview, may have been influenced by aspects of their personality and communication style. Study two (a) investigated whether personality and communication style characteristics added anything further to the cognitive information-processing framework chosen to interpret the major findings from study two.

5.4.1. Comparability of participants on measures of personality and communicative style

5.4.1.1. Comparisons of EPITs and controls on the Big-Five measure
Table 5.1 presents a comparison of medians and interquartile ranges for both groups on the five aspects of the Big Five Personality Inventory. Table 5.2 presents between group analyses (Mann-Whitney) of these median scores, and suggests that at time 2 there was only one significant difference observed between the two groups. Results suggested that the EPIT group scored significantly higher on the "Neuroticism" scale, than did the control group (EPIT group median score = 20.00, control group median score = 12.00, U = 11.00, p<.05).
Table 5.3  Medians and interquartile ranges of EPITs and controls’ scores on the Norton

<table>
<thead>
<tr>
<th>Norton Measures</th>
<th>EPITs Medians</th>
<th>IQR</th>
<th>Controls Medians</th>
<th>IQR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective</td>
<td>17.00</td>
<td>3.00</td>
<td>17.00</td>
<td>4.25</td>
</tr>
<tr>
<td>Dominant</td>
<td>15.00</td>
<td>3.00</td>
<td>16.00</td>
<td>4.50</td>
</tr>
<tr>
<td>Non-verbal</td>
<td>19.50</td>
<td>2.00</td>
<td>18.00</td>
<td>3.25</td>
</tr>
</tbody>
</table>
Table 5.4 Mann-Whitney scores for between group comparisons on the Norton EPITs vs Controls (Time 2)

<table>
<thead>
<tr>
<th>Norton Measures</th>
<th>U</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective</td>
<td>38.50</td>
<td>.90 NS</td>
</tr>
<tr>
<td>Dominant</td>
<td>33.50</td>
<td>.57 NS</td>
</tr>
<tr>
<td>Non-verbal</td>
<td>25.50</td>
<td>.20 NS</td>
</tr>
</tbody>
</table>

NS = Non-significant
Table 5.5 Correlations between participants' scores on the Big-5 and the Norton

<table>
<thead>
<tr>
<th>Big-5 Measures</th>
<th>Norton Measures</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Effective</td>
<td>Dominant</td>
<td>Non-verbal</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>-0.32</td>
<td>-0.46</td>
<td>-0.00</td>
</tr>
<tr>
<td>Extroversion</td>
<td>0.48</td>
<td>0.57</td>
<td>0.03</td>
</tr>
<tr>
<td>Openness</td>
<td>0.15</td>
<td>0.55</td>
<td>0.46</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>0.13</td>
<td>-0.15</td>
<td>-0.36</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>0.05</td>
<td>-0.59</td>
<td>-0.42</td>
</tr>
</tbody>
</table>

NOTE: All comparisons non-significant at p<.05 with a Bonferroni correction applied at p<.003
Table 5.6 Correlations between participants’ problem-analysis ratings and the Big-5

<table>
<thead>
<tr>
<th>Big-5 Measures</th>
<th>Acc</th>
<th>Comp</th>
<th>Clar</th>
<th>Agree</th>
<th>Argu</th>
<th>Causes</th>
<th>Spec</th>
<th>Approp</th>
<th>CompNS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroticism</td>
<td>0.01</td>
<td>-0.52</td>
<td>-0.39</td>
<td>-0.37</td>
<td>-0.43</td>
<td>-0.37</td>
<td>-0.48</td>
<td>-0.45</td>
<td>-0.42</td>
<td>-0.39</td>
</tr>
<tr>
<td>Extroversion</td>
<td>-0.11</td>
<td>0.10</td>
<td>-0.17</td>
<td>-0.08</td>
<td>0.06</td>
<td>0.02</td>
<td>0.13</td>
<td>0.01</td>
<td>0.07</td>
<td>-0.04</td>
</tr>
<tr>
<td>Openness</td>
<td>-0.32</td>
<td>0.06</td>
<td>-0.08</td>
<td>-0.17</td>
<td>-0.12</td>
<td>-0.06</td>
<td>-0.01</td>
<td>-0.04</td>
<td>0.07</td>
<td>-0.08</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>-0.22</td>
<td>-0.02</td>
<td>-0.01</td>
<td>0.04</td>
<td>0.06</td>
<td>-0.10</td>
<td>-0.03</td>
<td>0.12</td>
<td>0.00</td>
<td>0.05</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>-0.38</td>
<td>0.13</td>
<td>-0.26</td>
<td>0.31</td>
<td>0.22</td>
<td>0.19</td>
<td>0.27</td>
<td>0.27</td>
<td>0.16</td>
<td>0.27</td>
</tr>
</tbody>
</table>

NOTE: All comparisons non-significant at p<.05 with a Bonferroni correction applied at p<.001

KEY:  
Acc = accuracy of aspects  
Comp = completeness of aspects  
Clar = clarity of aspects  
Agree = agreement with experts on choice of priorities  
Argu = soundness of argument for priorities  
Causes = soundness of argument for causes of priority aspects  
Spec = specificity of next steps  
Approp = appropriateness of next steps  
Comp NS = completeness of next steps  
Total = overall problem analysis quality (sum of ratings)  
*p<.05 (Bonferroni correction significant at p<.0012)
Table 5.7  Correlations between participants’ problem-analysis ratings and the Norton

<table>
<thead>
<tr>
<th>Norton Measures</th>
<th>Acc</th>
<th>Comp</th>
<th>Clar</th>
<th>Agree</th>
<th>Argu</th>
<th>Causes</th>
<th>Spec</th>
<th>Approp</th>
<th>CompNS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective</td>
<td>-0.20</td>
<td>-0.09</td>
<td>-0.19</td>
<td>0.08</td>
<td>0.12</td>
<td>0.03</td>
<td>0.15</td>
<td>-0.05</td>
<td>0.04</td>
<td>-0.12</td>
</tr>
<tr>
<td>Dominant</td>
<td>-0.07</td>
<td>0.31</td>
<td>0.05</td>
<td>0.04</td>
<td>0.22</td>
<td>0.19</td>
<td>0.22</td>
<td>0.13</td>
<td>0.24</td>
<td>0.12</td>
</tr>
<tr>
<td>Non-verbal</td>
<td>-0.14</td>
<td>-0.13</td>
<td>-0.20</td>
<td>-0.12</td>
<td>-0.24</td>
<td>-0.05</td>
<td>-0.08</td>
<td>-0.12</td>
<td>0.05</td>
<td>-0.19</td>
</tr>
</tbody>
</table>

**NOTE:** All comparisons non-significant at p<.05 with a Bonferroni correction applied at p<.001

**KEY:**
- Acc = accuracy of aspects
- Comp = completeness of aspects
- Clar = clarity of aspects
- Agree = agreement with experts on choice of priorities
- Argu = soundness of argument for priorities
- Causes = soundness of argument for causes of priority aspects
- Spec = specificity of next steps
- Approp = appropriateness of next steps
- Comp NS = completeness of next steps
- Total = overall problem analysis quality (sum of ratings)

* p<.05 (Bonferroni correction significant at p<.0012)
Table 5.8  Correlations between interviewer behaviour scores and the Big-5

<table>
<thead>
<tr>
<th>Big-5 Measures</th>
<th>Open question</th>
<th>Closed question</th>
<th>Number of utterances</th>
<th>Accessible reasoning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroticism</td>
<td>-0.31</td>
<td>-0.44</td>
<td>0.08</td>
<td>0.57</td>
</tr>
<tr>
<td>Extroversion</td>
<td>0.46</td>
<td>-0.18</td>
<td>-0.33</td>
<td>-0.05</td>
</tr>
<tr>
<td>Openness</td>
<td>0.23</td>
<td>-0.11</td>
<td>0.43</td>
<td>0.00</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>0.56</td>
<td>0.17</td>
<td>0.21</td>
<td>0.05</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>-0.09</td>
<td>-0.02</td>
<td>-0.53</td>
<td>-0.12</td>
</tr>
</tbody>
</table>

NOTE: All comparisons non-significant at p<.05 with a Bonferroni correction applied at p<.003
Table 5.9  Correlations between interviewer behaviour scores and the Norton

<table>
<thead>
<tr>
<th>Norton Measures</th>
<th>Open question</th>
<th>Closed question</th>
<th>Number of utterances</th>
<th>Accessible reasoning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective</td>
<td>0.21</td>
<td>0.11</td>
<td>0.04</td>
<td>-0.12</td>
</tr>
<tr>
<td>Dominant</td>
<td>0.30</td>
<td>0.13</td>
<td>0.10</td>
<td>-0.17</td>
</tr>
<tr>
<td>Non-verbal</td>
<td>-0.19</td>
<td>0.13</td>
<td>0.48</td>
<td>0.14</td>
</tr>
</tbody>
</table>

NOTE: All comparisons non-significant at p<.05 with a Bonferroni correction applied at p<.004
this result suggests that near the end of an intensive and demanding training year the EPIT group was significantly more neurotic than the control group. This result could well be attributed to stress associated with making a major role shift from teacher to educational psychologist. Such results could mean that involvement in training leads to a degree of neuroticism, or that "neurotic" types choose to become EPITs.

Unfortunately, we do not have any before measures and, thus, can only conjecture that the groups were in fact similar on the neuroticism scale at time 1. It could well be that the group of participants who were able to start training differed from the group of participants who were unable to take up a training place (for whatever reason).

Studies have shown that adolescents and young adults (under 30s) tend to obtain significantly higher Neuroticism scores than adults (and higher Extroversion and lower Agreeableness and Conscientiousness scores) (Costa & Widiger, 1994). The majority of the EPITs and controls were aged between 26 and 35 years of age (70% and 75% respectively), with this difference between the groups not being significant.

Related research on student anxiety and stress has shown that new situations, the demands of academic tasks, being evaluated and judged, and preparing assignments can all impact on an individual’s emotional state. These are the very types of activities with which EPITs are involved (Ormrod, 1998). It therefore seems reasonable to assume on theoretical grounds, given the research on anxiety and stress, that the higher Neuroticism scores in the EPIT group were probably an emotional result of the demands made during an intensive training year rather than a function of age (Ormrod, 1998; Palmer, 1992). In all other respects, at time 2 the two groups did not significantly differ in terms of their personality characteristics.

5.4.1.2. Comparisons of EPITs and controls on the Norton measure

Table 5.3 presents a comparison of medians and interquartile ranges for both groups on the three components of the Norton Communication Style measure. Table 5.4 presents the between group analyses (Mann-Whitney) of these median scores, and suggests that there were no significant differences noted between the two groups on their scores for "Effective", "Dominant", and "Non-verbal" characteristics.

At the time of writing there have been no other studies which have used the 18-
item short-form version of the Norton. Therefore normative comparisons of EPIT and control scores with other groups was not possible. Results provide a useful set of baseline measures for future research in this area.

5.4.1.3. Correlations between the Big-Five and the Norton measures

Table 5.5 presents the intercorrelations between the Big Five and the Norton measures. It was found that the two measures did not overlap to any significant extent. These results suggest that the two measures were independent of each other, and were sampling different dimensions of participants' functioning. These results provide support for viewing the two measures as different, one sampling personality characteristics, and the other participants' perceptions of their communication style.

Summary of hypotheses

The research question asked of the data was:

1. Are the two groups of participants actually comparable on measures of personality and communication style characteristics?

Data collected and summarised above provided support for the following hypothesis:

1.2. That there would be no significant difference between the two groups (EPITs and controls) in their communication style characteristics.

Data collected and summarised above provided partial support for the following hypothesis:

1.1. That there would be no significant difference between the two groups (EPITs and controls) in their personality characteristics. In fact, data showed that the EPIT group was significantly more neurotic than the control group. On all other measures there were no significant differences noted between the two groups.
5.4.2. The relationship between personality and communication style to problem-analysis quality and strategies used

5.4.2.1. Correlation between participants' problem-analysis ratings and the Big-Five
Table 5.6 presents the correlations between participants' problem-analysis subscales, and total scores and the Big Five measure. Analyses yielded no significant intercorrelations. These results would suggest that the characteristics of a participant's personality did not contribute significantly to his or her ability to gain a high quality understanding of a teacher's problem.

5.4.2.2. Correlation between participants' problem-analysis ratings and the Norton
Table 5.7 presents the correlations between participants' problem-analysis subscales, and total scores and the Norton measure. Results yielded no significant relationships. These results would suggest that a participant's perception of their communication style did not contribute significantly to their ability to gain a high quality understanding of a teacher's problem.

5.4.2.3. Correlation between interviewer behaviours and the Big-Five measure
Table 5.8 presents the correlations between the participants' use of a range of interviewer strategies (open questions, closed questions, number of utterances, and accessible reasoning), and the Big Five measure. Results yielded no significant relationships. These results would suggest that a participant's personality was not a significant factor in influencing his or her use of any particular interview strategy.

5.4.2.4. Correlation between interviewer behaviours and the Norton measure
Table 5.9 presents the correlations between the participants' use of a range of interviewer strategies (open questions, closed questions, number of utterances, and accessible reasoning) and the Norton measure. Results yielded no significant relationships. These results would suggest that a participant's perception of their communication style was not a significant factor in their use of any particular interview strategy.

Though the results did not yield any significant correlations, when the Bonferroni
Table 5.10  Correlations between participants’ perceptions of the interview task, self-rating of their problem-analysis quality and the Big-5 at time 2

<table>
<thead>
<tr>
<th>Big-5 Measures</th>
<th>Familiarity</th>
<th>Complexity</th>
<th>Difficulty</th>
<th>Realism</th>
<th>Convincingness</th>
<th>Problem analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroticism</td>
<td>-0.00</td>
<td>-0.00</td>
<td>0.23</td>
<td>-0.21</td>
<td>-0.05</td>
<td>-0.12</td>
</tr>
<tr>
<td>Extroversion</td>
<td>-0.03</td>
<td>-0.14</td>
<td>-0.21</td>
<td>-0.27</td>
<td>-0.06</td>
<td>0.20</td>
</tr>
<tr>
<td>Openness</td>
<td>-0.36</td>
<td>0.13</td>
<td>0.14</td>
<td>0.06</td>
<td>0.10</td>
<td>-0.24</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>-0.00</td>
<td>0.23</td>
<td>0.27</td>
<td>0.26</td>
<td>-0.27</td>
<td>-0.08</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>0.19</td>
<td>0.10</td>
<td>0.03</td>
<td>-0.08</td>
<td>-0.35</td>
<td>0.25</td>
</tr>
</tbody>
</table>

NOTE: All comparisons non-significant at p<.05 with a Bonferroni correction applied at p<.001.
Table 5.11  Correlations between participants’ perceptions of the interview task, self-ratings of their problem-analysis quality and the Norton at time 2

<table>
<thead>
<tr>
<th>Norton Measures</th>
<th>Perceptions of interview task and problem analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Familiarity</td>
</tr>
<tr>
<td>Effective</td>
<td>-0.51</td>
</tr>
<tr>
<td>Dominant</td>
<td>0.09</td>
</tr>
<tr>
<td>Non-verbal</td>
<td>-0.38</td>
</tr>
</tbody>
</table>

* p<.05 (Bonferroni correction applied at p<.003)
statistic was used, some of the relationship were still quite high. This suggests that with a larger sample size some of these relationships could become significant.

Summary of hypotheses
The research question asked of the data was:

2. Do personality and communication style characteristics add anything further to our understanding of how EPITs achieve a high quality understanding of a teacher's presenting problem, than exploring/evaluating interviewer strategies such as open and closed questions, number of utterances and accessible reasoning?

Data collected and reported above provided support for the following hypotheses:

2.1. That there would be no significant relationship between the personality characteristics of participants', and the quality of their written problem analyses;

2.2. That there would be no significant relationship between the communication style characteristics of participants', and the quality of their written problem analyses;

2.3. That there would be no significant relationship between the personality characteristics of participants', and their use of open or closed questioning, number of utterances, and accessible reasoning;

2.4. That there would be no significant relationship between the communication style characteristics of participants' and their use of open or closed questioning, number of utterances, and accessible reasoning.

5.4.3. The relationship between participants' personality and communication characteristics with their perceptions of interview tasks, and self-ratings of their problem-analysis quality
5.4.3.1. Correlation between participants' perceptions of the interview task, self-ratings of problem-analysis quality and the Big-Five measure

Table 5.10 presents the correlations between the participants' ratings of the content of the interview task (familiarity, complexity, difficulty), interview situation (realism, convincingness), and their own rating of their problem-analysis quality, with the Big-Five measure. Results yielded no significant relationships. These results would suggest that a participant's personality was not a significant factor related to forming their perceptions around the initial interview tasks, or their view on the quality of their problem analysis.

5.4.3.2. Correlation between participants' perceptions of the interview tasks, self-ratings of problem-analysis quality and the Norton measure

Table 5.11 presents the correlations between the participants' ratings of the content of the interview task (familiarity, complexity, difficulty), interview situation (realism, convincingness), and their own rating of their problem-analysis quality, with the Norton measure. Results yielded only one significant relationship with a, "Non-verbal" communication style being correlated with perception of "Problem-analysis" quality (rho = -0.679, Bonferroni correction significant at p< 0.003). This result suggests that either participants who obtained higher non-verbal ratings would view their problem-analyses as being of lower quality, or the reverse that those with lower non-verbal scores would view their problem-analyses as being of higher quality. Further research is warranted to ascertain the meaning and significance of this result.

Summary of hypotheses

The research question asked of the data was:

3. What is the relationship between personality and communication style characteristics, and participants' perceptions of the interview task, and self-ratings of their problem-analysis quality?

Data collected and presented above provided support for the following hypothesis:

3.1. That there would be no significant relationship between participants' personality characteristics, and their perceptions of the interview task, and self-ratings of
their problem-analysis quality;

Data collected and presented above did not support the following hypothesis:

3.2. That there would be no significant relationship between participants' communication style characteristics, and their perceptions of the interview task, and self-ratings of their problem-analysis quality. In fact, there was a significant relationship between the Non-verbal subscale, and self-rating of problem-analysis quality.

5.5. LIMITATIONS OF STUDY TWO (A)

The next section will outline some of the limitations related to study two (a), and thus place any overall conclusions within a more cautious context. In study two (a) measures of participants' personality and communication style were correlated with their problem understanding scores derived from study two. Correlational studies enable conclusions to be drawn about the extent to which two variables are interrelated. As outlined in the previous chapter, Leedy (1980) stressed that the major purpose of research is that it should be replicable; that is, it should be able to be repeated by any other researcher at any other time under precisely the same conditions. In the following section factors which could have affected the study's reliability, validity and generalisability are discussed.

5.5.1. Issues to consider

Sample size

As with study two, the relatively small sample size is the most obvious and arguably the most significant constraint to the generalisability of the results. A small sample size could have affected the results in the following ways:

Statistical significance

The use of relatively small numbers of participants reduces the power and generalisation of the statistical tests used. This is especially relevant given Furnham et al's (1997)
observation that where personality factors do correlate with outcomes they are usually small. Using a much larger sample would address this weakness and increase the power of statistical tests used.

**Representativeness of sample**

As detailed in the critique of study two, an important question was whether the group of EPITs used in this research, and the results obtained, were generalisable to other EPITs on comparable courses. Questions also arise about whether the EPIT sample was comparable with the control group on personality and communication style at time 1. It could well be that the EPIT sample was not, in fact, representative of the types of people selected onto other courses; equally it may well have been. Study two (a) assumed that, despite the small sample size, the EPITs were representative of the larger population of EPITs, and that the results would be generalisable. Sample representativeness is acknowledged as a challenge to the generalisability of the findings of study two (a).

**Research design and comparability of EPIT and control groups**

Study two (a) did not include a pre-measure on the personality, and communication style questionnaires. The research design relied instead upon the use of post-measures only. The rationale for this was that the literature argued for the stability over time of personality traits, and by association communication style. In addition, it was assumed that to overload participants at time 1 with two additional questionnaires would have been unhelpful. By time 2 participants were more familiar with the requirements of the task, and Questionnaire A (demographic factors) was not used. Thus, the inclusion of two extra shorter questionnaires meant that participants were involved for about the same amount of time as they had been at time 1. This was an important consideration given the challenging demands of the tasks used in study two, and the participants' fatigue and travel needs.

Unfortunately, with hindsight, not having a set of pre-measures makes a valid interpretation of the results, especially those on neuroticism, much more problematic. For example, on the neuroticism measure, were the two groups actually different before training commenced, or did training affect EPIT neuroticism, or were "neurotics" more
likely to select the option to train or to be offered funded places as a result of their interview performance. Sample representativeness was acknowledged as a challenge to the generalisability of the findings of study two (a).

**Hawthorne effect and social desirability effect**

The Hawthorne effect describes the degree to which participants' behaviour is influenced by the mere fact of participating in a research study. In study two (a) the participants' experiences of undertaking an initial interview, as if they were an educational psychologist, and the processes of thinking and writing a problem analysis may well have affected how they approached the subsequent personality and communication style questionnaires.

The post-interview tasks, and in particular the problem-analysis questions, may well have led participants to answer the personality and communication style questionnaires in ways that they thought the researcher wanted, and in ways they thought were socially acceptable and pleasing (or not) to the researcher - the EPITs because they were still in training and wanted to be seen as competent, and the controls because they wanted to be seen as suitable for training. The Hawthorne effect and possible influence of social desirability as factors in limiting the efficacy of this study is acknowledged.

**5.6. CONCLUSIONS**

The rationale for study two (a) was to investigate whether alternative explanations added anything to our understanding of the results obtained in study two. In study two it was argued that the quality of an interviewer's understanding of a teacher's problem was highly related to his or her use of accessible reasoning during such interviews. The theoretical rationale for such a view was derived from information processing theory and cognitive psychology.

Research from the field of personality psychology provided an additional source of factors which might also contribute to a participant's ability to obtain a high quality understanding of a teacher's problem. The quality of an interviewer's understanding could well be the result of personality or communication style features, with the use (or
not) of accessible reasoning being the outward manifestation of an underlying personality trait.

To test such assumptions a measure of personality and a measure of communication style were used. Unfortunately, these measures were only administered at time 2 of study two, and not having a pre-measure limited the validity of any conclusions reached. In spite of this constraint the results indicated that the only significant difference noted between the two groups was on the Neuroticism scale. These results suggest that EPITs were significantly more anxious, angry, depressed, self-conscious, impulsive and vulnerable than the control group (Costa & McCrae, 1992). This finding was not unexpected given the literature on stress, especially given the task and emotional demands involved in an intensive and rigorous one-year training course.

It would have been interesting to have investigated whether EPIT levels of Neuroticism altered after a period of time working as educational psychologists. If this investigation had shown a significant decrease (or increase), in Neuroticism levels, then doubt would have been cast on the assumption that the Big-Five measured a consistent and stable personality factor. It may well measure perceptions which are influenced by specific emotional states.

The crucial question is whether personality and/or communication style characteristics contributed anything additional to our understanding of the factors which influence how an interviewer reaches a high quality problem understanding. The results of this study do not provide any support for such links. There were no significant relationships observed between any of the personality or communication subscale measures, and the overall quality of participants' problem analyses. This finding greatly enhances the credibility of the arguments drawn from the data in study two.

Finally, the results of study two (a) indicate that following an intensive period of training EPITs are more neurotic than controls, and are better at using accessible reasoning during initial teacher interviews. The paradox here is that neuroticism is not thought to be a particularly useful characteristic for interviewing and problem solving. Neuroticism was found to be negatively correlated with Effective and Dominant communication, but has no influence upon Non-verbal skills.
5.6.1. The next investigation

The next chapter describes the results of a qualitative investigation into the possible effects that training may have on the number and type of hypotheses EPITs use to integrate aspects of the teacher's problem situation.
CHAPTER SIX

STUDY TWO (B): An investigation into the effects training has on the number and type of written hypotheses EPITs use to integrate aspects of the teacher's problem situation following an initial interview

"Our evidence suggests that teachers' picture of parents is generally very negative. Many teachers feel that parents are to blame for much misbehaviour in schools. We consider that, while this picture contains an element of truth, it is distorted" (Elton Report - DES, 1989, p.133).

6.1. RATIONALE FOR STUDY TWO (B)

Study one indicated that the majority of training courses in England, Wales and Northern Ireland claimed to teach an hypothesis-testing framework to guide interviewing and problem solving. In addition the majority of course tutors also reported that they taught accessible reasoning (or semantic variants of it) to the EPITs on their courses. However, the main problem with study one was that there was no way to collaborate whether, at a theory-in-use level, courses actually did the things they reported that they were doing.

One of the aims of study two was to try to investigate aspects of the-theory-in-use of one particular course. The results of this study confirmed earlier research by Robinson and Halliday (1988) and showed a particularly robust relationship between the use of accessible reasoning during an initial teacher interview and the subsequent quality of EPITs' understanding of the teacher's problem situation. Study two (a) explored whether factors such as EPITs' personality and communication style added anything to our understanding of the processes involved in problem reasoning. Overall the results obtained in study two (a) showed no significant relationships between these factors and problem understanding. On the basis of the results obtained from the previous studies and the research discussed in chapter two on the importance of content-guides to facilitate effective problem solving, it was hypothesised that following training, EPITs would differ from controls in both the number and type of hypotheses used to integrate
Table 6.1 Summary of causal factors identified by teachers

<table>
<thead>
<tr>
<th>Type of difficulty</th>
<th>Behaviour/ emotional problem (N=872)</th>
<th>Discipline problem (N=500)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any &quot;within-child&quot; (not including health)</td>
<td>30.8%</td>
<td>38.8%</td>
</tr>
<tr>
<td>Home</td>
<td>65.8%</td>
<td>65.6%</td>
</tr>
<tr>
<td>Any school/teacher</td>
<td>2.5%</td>
<td>3.8%</td>
</tr>
<tr>
<td>Any health/absence</td>
<td>2.6%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Any &quot;within-child&quot; or home factors</td>
<td>80.3%</td>
<td>82.4%</td>
</tr>
</tbody>
</table>


Note: Teachers were able to select more than one causal factor, as a result the columns do not add up to 100 per cent (Miller, 1996, p.137).
aspects of the teacher's problem situation.

6.1.1. Teachers' causal attributions for pupils' behaviour

At the start of study two (time 1) reported in chapter four of this thesis, both groups of participants were either working as classroom teachers or had only recently resigned their positions so they could undertake training to be educational psychologists. In study two (time 1) participants had to interview a teacher, as if they were an educational psychologist and then write-up a problem analysis which clearly showed their thinking about: What were the various aspects of the teacher's problem situation. They were asked to describe, with reasons, the most important aspects of the problem situation and give reasons why others were less important; Identify the possible current factors influencing those aspects they had identified as most important and; Describe, with reasons, the steps they would take/recommend regarding further assessment or intervention.

In this initial interview simulation task participants were asked to try to identify possible causal factors (or attributes) which might be directly causing or supporting the problems the teacher was experiencing. Miller (1996) suggests that teachers' ideas about the possible "causes of special needs, particularly learning and behaviour problems, are likely to affect the attitudes they take towards children with special needs" (p.137). In addition it is likely that the way teachers construct their causal explanations about their problem is going to have an effect on how they perceive that situation, the interventions implemented and how successful they will be (Ravenette, 1997).

In 1985 Croll and Moses undertook one of the most extensive surveys in the United Kingdom of teachers' attitudes, knowledge and practice around the area of special educational needs. They surveyed 428 junior class teachers in 61 schools across 10 LEAs. Croll and Moses asked the teachers surveyed to explain the reasons for the special needs of children within their classes. Causal factors such as intelligence or ability, attitude and concentration were grouped under the heading "within-child" causal factors. Parental attitudes, standard of living and pathological social or emotional conditions were grouped under "home factors". Table 6.1 summarises Croll and Moses' findings for teachers' causal attributions for behaviour and discipline problems. In about 66% of cases behaviour and discipline problems in children were perceived to be due to "home"
based factors, with about 31% of behaviour problems and about 39% of discipline problems being identified with "within-child" factors (excluding health). Only about 3% of causal factors were attributed to "school" or "teacher" factors for behaviour problems, and about 4% for discipline problems (Croll & Moses, 1985, p47).

One of the few studies which have attempted to explore actionable concepts around the efficacy of teachers' behaviour management strategies is Miller's study (1996). Miller undertook a national survey of educational psychologists, in which he explored what interventions educational psychologists used with pupils who exhibited challenging behaviour. He then undertook in-depth interviews with 24 teachers to try to identify the factors associated with successful behavioural interventions. Miller argued that schools not only have the responsibility for delivering the national curriculum, but they are also charged with keeping order and discipline within classrooms and the playgrounds. The government guidelines to teachers for the national curriculum are stated in specific and largely actionable knowledge terms. However, in contrast he observed that the guidance given with regard to managing challenging child behaviour was usually stated in general applicable knowledge terms (Argyris, 1982). As a result teachers and school administrators are left to try to implement what can be vague and sometimes ill-focused aims.

Miller's study (1996) was not on the same scale as Croll and Moses' questionnaire survey (1985) because it had a rather different purpose. Miller wanted to probe in much greater depth the basis of the teacher attributions identified by the survey study of Croll and Moses'. Miller was also able to compare and contrast the attributions teachers made for the positive. changes that occurred within actual interventions for behaviour difficulties.

Miller (1996) undertook 24 in-depth teacher interviews in which he asked questions to obtain information on teachers' causal reasoning (attributions) about the origins of the pupils' difficulties, and for any improvements noted. The interview transcripts were also analysed for causal explanations offered to other questions. What is of interest to this thesis is that teachers made attributions to themselves that were 10 times more favourable than they made to parents and about 3 times more favourable than they made to pupils.
Miller's study obtained results which differed from those of Croll and Moses (1985) who reported a much greater proportion of the responsibility for pupil difficulties were attributed to "home" factors and to "within-pupil" factors. Miller observed that although parents were still identified as being significant factors in causing pupil difficulties, in his study at least, teachers were more likely to also identify causal factors which they would be able to alter or at least modify. It is important at this point to stress that Miller's sample was relatively small and that these were teachers who had experienced a successful behaviour intervention. It could be that very different results would be obtained with a sample of teachers who had not experienced success in working with challenging child behaviour. Building upon this point Miller states that, if the sample were not "specifically selected in this manner, results would probably be much more like those obtained by Croll and Moses" (p.150).

Miller's (1996) research provides a rich and extensive list of the causal attributions teachers use when they try to understand pupils whom they are finding difficult to manage, for whatever reason. The most frequent "within-child" factors identified are those to do with health and physical causes, a need for praise, a lack of acceptance of social norms and temperament or personality (p.151). To parents teachers generally attributed punitive or violent home circumstances, inadequate child-management, an absent father, and a lack of attention. Teachers attributed the following factors to themselves as contributing to problems - setting insufficiently interesting work and having unrealistic expectations of the pupil.

Research by Hammersley (1984) provides yet another perspective on the dynamic of teacher problem reasoning. Hammersley conducted a qualitative investigation into the defining features of the culture of teaching via analysing the conversations (talk) that occurred in the staffroom at Downtown secondary school. Hammersley's study reports what appears at times (via the excerpts of conversations given) to be a negative and judgmental stance taken by teachers against their pupils and the community. However, Hammersley uses such dialogue to argue that such talk serves important social and psychological functions.

Most of the conversations which occurred in Downtown secondary school were concerned with teachers talking about particular pupils they were finding "troublesome"
within their classrooms. There was very little attempt to view the pupil within a context which included teacher expectations of them. Context and setting appeared to be assumed and taken for granted and did not need to be discussed or considered in terms of their possible contributions to the problem situation (i.e. difficult pupil behaviour). Hammersley concluded that teachers were trying to make sense of what was happening in their classrooms by sharing their concerns with colleagues. Teachers tended to hypothesise about the internal and home characteristics of pupils rather than attempting a more detailed critique of the actual problem behaviour or the features of the problem situation. In analysing the form and content of the teacher-teacher conversations recorded, Hammersley concluded that they served protection and distancing functions (i.e. the problem was out there, within the child or their terrible home circumstances, what could a teacher possibly do). A flavour of these conversations is evident from the following excerpt:

"30. Vaughan: Mills went berserk this morning, he's a bit unstable that lad.

31. Vaughan: Mills really blew his top today. He'll be inside soon I know it, he's going that way.

32. Vaughan: Mills is going to end up on a manslaughter charge.

33. Vaughan: The slightest thing can set him (Mills) off, someone's only got to stand on his toe and he's off.

34. (Vaughan talks about Mills now and last year)
   Vaughan: If he can't conform reasonably to society then society'll have to kick him out and treat him as an exceptional case.
   Vaughan: He's got a tremendous persecution complex."


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6.1.2. Causal reasoning and problem analysis

Over the course of the training year EPITs at UCL are taught not only a process framework to guide their problem solving (i.e. the problem analysis framework outlined in chapter two) but also incorporated within this and other curriculum areas is the notion of viewing the problem situation as involving a complex interplay of a range of causal features (i.e. interactional causation). Within step three and step five of the problem analysis framework (refer to appendix A) the ideas of causal modelling developed by Morton and Frith (1995) have been adapted to serve this function.

When an EPIT comes to the stage of trying to make sense of the teacher's problem situation they are taught to look for and check out biological, cognitive, behavioural and environmental aspects of the problem situation. The tendency to try to locate the problem within any one of these zones is challenged. The EPIT is encouraged to try and integrate these various aspects into an integrating hypothesis which communicates the interactional (or circular) causation of problem situations. Please refer to chapter two and appendix A for a more detailed discussion of these areas. For the purposes of this section it is important to note that once training has commenced not only do EPITs acquire a hypothesis-testing framework to guide their actions but also a model of causation which stresses the interactional nature of problem situations.

6.1.3. Conclusions

Croll and Moses' (1985) and Miller's (1996) research provides useful reference points against which the results of study two (b) can be compared and contrasted. Croll and Moses found that teachers tend to attribute cause largely to "home" and "within-child" factors. Miller's study observed that teachers were able to use a "highly differentiated set of explanatory mechanisms related to children" (p.201), with about twice as many pupil-related causal attributions being made compared to those being attributed to teachers. The most frequently identified factors associated with "within-child" were physical or medical causes, a need for praise, a lack of acceptance of social norms and temperament or personality.
The use of "within-child" and medical models of causation serve a very important purpose in that such constructions enable the teacher (or problem owner) to protect their "professional self-esteem from implied accusations of a lack of early positive action" (Miller, p.205). Hammersley's study (1984) reinforced the view that teachers conceptualise problems as a "failure" on the part of the individual pupil. Pupil failure was given various classifications such as psychological or personality characteristics. These classifications were very robust and enabled teachers to view pupil behaviour as consistent and problematic in a range of settings irrespective of the actual causal feature operating within these settings. Gill and Monsen (1996) observed in their work training teachers to be more skilful in dealing with challenging child behaviour - via the Staff Sharing Scheme - that before training teachers "had doubts about their own abilities to solve problems and regarded problems as things to be feared. Especially feared was the 'unsolved' problem that reflected the teachers' own feelings of incompetence" (pp.187-188). As a result, at least before training, it would not be not surprising if teachers were attached to employing "within-child", "home" and medical model constructions of problem causes.

6.2. AIMS OF STUDY TWO (B)
This study investigates whether training has any influence on the number and type of attributions which are used by EPITs to generate possible causal links between aspects of the teacher's problem situation. The EPIT sample used in this study was involved in a programme where an hypothesis-testing framework was taught. Within this framework the importance of interactional hypotheses was stressed, that is the need to view causes as not solely being attributable to either within child/teacher factors or to solely environmental factors.

6.2.1. Research questions and hypotheses for study two (b)
The research questions and hypotheses asked of the data collected were:

1. Are the two groups of participants actually comparable on measures of number
and type of attributions?

6.2.1.1. Comparability of participants on measures of number and type of attributions used

At time 1, before the start of training, the specific hypotheses were:

1.1. That there would be no significant differences between the two groups of participants in both the number and type of attributions used;

1.2. That both groups would be using mainly "within-child" and/or "home" based attributions to integrate aspects of the teacher's problem situation.

At time 2, near the end of training, the specific hypotheses were:

1.3. That there would be no significant differences between the two groups of participants in the number of attributions used;

1.4. That there would be a significant difference between the two groups of participants in the type of attributions used to integrate aspects of the teacher's problem situation;

1.5. That the EPIT group would be using significantly more interactional attributions than the control group.

6.3. METHOD

6.3.1. Participants

Data were obtained and analysed from the written problem analyses prepared by the group of ten EPITs and the eight controls who participated in studies of this thesis. The descriptive characteristics of these groups are presented in sections 4.3.4 and 4.3.4.1 of chapter four of this thesis.
6.3.2. Procedure

Training of coders and raters

Section three of the participants' written problem analyses written at time 1 and time 2 was coded for both the number and type of hypotheses used (i.e. Section 3: "Identify the possible current causes of factors influencing those aspects you have identified as most important"). A random sample of 33% (12) of the 36 scripts was coded a second time by a senior educational psychologist/course tutor. The second coder was familiar with marking problem analyses.

Coder training involved one hour's work with the researcher in which a range of section threes from a selection of written problem analyses (at both time 1 and time 2) were gone through and coded using the research definitions outlined in this chapter. Agreements and disagreements were highlighted and discussed with reference back to the definitions. Analyses yielded inter-coder agreements of 87% at time 1 and 92% at time 2.

For statistical analyses, once acceptable inter-coder reliabilities had been established (set at or above 70% agreement), then the scores of the first coder were used for all subsequent analyses. Inter-coder agreements were calculated using the effective formula for low frequency behaviours (Hartmann, 1977). This is outlined in section 4.3.6 in chapter four of this thesis.

In addition to the quantitative procedures undertaken a preliminary content analysis of participants causal attributions was made. This was completed so that summaries of the key attributions each group was making could be presented in table form. Such tables give a flavour of the actual attributions made by each group and are included in this chapter for purely illustrative purposes.

6.3.3. Dependent variable measures and scoring procedures

1. Number of hypotheses (attributions): For the purposes of this study an attribution was defined as "any attempt by the writer to make a causal connection or link between at least two separate pieces of data about the teacher's problem situation". The median number of attributions presented in section three of the problem analyses was used for all subsequent analyses.
2. Type of hypotheses (attributions): once an attribution was identified it was then assigned to one of seven categories:

- The first three categories identify connections or links which attribute cause to factors solely "Within" the child, such as health/hearing (i.e. Biological); or intelligence/learning difficulties, attainment levels, motivation, or attitude (i.e. Cognitive); or

- behavioural difficulties, such as non-compliant and aggressive (i.e. Behavioural).

- The fourth category, Home hypotheses identify connections or links which attributed cause to factors solely originating from the child's home (i.e. mother's attitude, lack of attention, lack of routines); and

- The fifth category, Teacher hypotheses identify connections or links which attributed cause to factors solely originating from "within" the teacher (i.e. teacher stress, lack of confidence, classroom management and organisation); and

- The sixth category, Environmental hypotheses identify connections or links which attribute cause to factors solely coming from the school environment (i.e. lack of school support, lack of adequate whole-school behaviour policy, large class size, limited supervision time); and finally,

- The seventh category, Interactional hypotheses identify connections or links which attribute cause to some form of interrelationship between "within-child" factors, "home", or "teacher", or "environmental" aspects. The total number of hypotheses used was obtained by adding up the numbers in each category (except for total "within-child" factors).
Two additional measures were calculated: 8. **Total number of "within-child" hypotheses used.** This involved adding together the number of biological, cognitive and behavioural hypotheses presented for each participant, and 9. **Total number of hypotheses used.** This involved adding together the number of hypotheses in each of the seven categories used for each participant. The median number of hypotheses in each category was used for all subsequent analyses.

### 6.3.4. Statistical analyses

All the data for this study were collected using coder judgements as to the number (frequency) and type of hypotheses used by participants in section three of their written problem analyses, at time 1 and time 2. Given the small sample size and for consistency non-parametric statistics were used (Glegg, 1982; Heyes, Hardy, Humphreys & Rookes, 1986; Howell, 1989). For all between group comparisons of medians the Mann-Whitney statistic was used, and for all group comparisons the Wilcoxon Test was used. An alpha level of significance of 0.05 was used, where a different alpha level was employed, this is clearly identified. The SPSS computer package held on disk at the Psychology Department at UCL (version 7.5) was used for all statistical analyses.
Table 6.2  Number, percentages, medians and interquartile ranges of EPITs and Controls number and type of attributions used at time 1 and time 2

<table>
<thead>
<tr>
<th>Measures</th>
<th>EPITs</th>
<th></th>
<th>CONTROLS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time 1</td>
<td>Time 2</td>
<td>IQR</td>
<td>%</td>
</tr>
<tr>
<td>Biological</td>
<td>3 3%</td>
<td>0.00</td>
<td>0.25</td>
<td>3 8%</td>
</tr>
<tr>
<td>Cognitive</td>
<td>4 10%</td>
<td>0.00</td>
<td>1.00</td>
<td>6 15%</td>
</tr>
<tr>
<td>Behavioural</td>
<td>8 19%</td>
<td>1.00</td>
<td>0.25</td>
<td>3 8%</td>
</tr>
<tr>
<td>Total within child</td>
<td>15 36%</td>
<td>1.00</td>
<td>1.25</td>
<td>12 31%</td>
</tr>
<tr>
<td>Home</td>
<td>11 26%</td>
<td>1.00</td>
<td>1.00</td>
<td>1 3%</td>
</tr>
<tr>
<td>Within teacher</td>
<td>13 31%</td>
<td>1.00</td>
<td>1.50</td>
<td>7 18%</td>
</tr>
<tr>
<td>Environmental</td>
<td>2 5%</td>
<td>0.00</td>
<td>0.25</td>
<td>4 10%</td>
</tr>
<tr>
<td>Interactional</td>
<td>1 2%</td>
<td>0.00</td>
<td>0.00</td>
<td>15 39%</td>
</tr>
<tr>
<td>Total</td>
<td>42 100%</td>
<td>3.50</td>
<td>2.50</td>
<td>39 100%</td>
</tr>
</tbody>
</table>
Table 6.3  Mann-Whitney scores for between group comparisons of number and type of attributions at time 1 and time 2

<table>
<thead>
<tr>
<th>Measures</th>
<th>EPITS vs Controls (Time 1)</th>
<th></th>
<th>EPITS vs Controls (Time 2)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U</td>
<td>P</td>
<td>U</td>
<td>P</td>
</tr>
<tr>
<td>Biological</td>
<td>39.00</td>
<td>0.97</td>
<td>33.00</td>
<td>0.57</td>
</tr>
<tr>
<td>Cognitive</td>
<td>39.00</td>
<td>0.97</td>
<td>36.50</td>
<td>0.76</td>
</tr>
<tr>
<td>Behavioural</td>
<td>33.00</td>
<td>0.57</td>
<td>28.00</td>
<td>0.32</td>
</tr>
<tr>
<td>Total number within child</td>
<td>33.50</td>
<td>0.57</td>
<td>37.00</td>
<td>0.83</td>
</tr>
<tr>
<td>Home</td>
<td>16.50</td>
<td>0.03 *</td>
<td>7.50</td>
<td>0.00 *</td>
</tr>
<tr>
<td>Within teacher</td>
<td>30.50</td>
<td>0.41</td>
<td>38.50</td>
<td>0.90</td>
</tr>
<tr>
<td>Environmental</td>
<td>32.00</td>
<td>0.52</td>
<td>21.00</td>
<td>0.10</td>
</tr>
<tr>
<td>Interactional</td>
<td>36.00</td>
<td>0.76</td>
<td>14.00</td>
<td>0.02 *</td>
</tr>
<tr>
<td>Total number of attributions</td>
<td>28.50</td>
<td>0.32</td>
<td>26.50</td>
<td>0.24</td>
</tr>
</tbody>
</table>

*  p<.05
Table 6.4  Wilcoxon Scores for within group comparisons of number and type of attributions used at time 1 and time 2

<table>
<thead>
<tr>
<th>Measures</th>
<th>EPITs vs controls (Time 1)</th>
<th>EPITs vs Controls (Time 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W</td>
<td>P</td>
</tr>
<tr>
<td>Biological</td>
<td>5.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Cognitive</td>
<td>10.00</td>
<td>0.48</td>
</tr>
<tr>
<td>Behavioral</td>
<td>35.00</td>
<td>0.10</td>
</tr>
<tr>
<td>Total number within child</td>
<td>19.00</td>
<td>0.38</td>
</tr>
<tr>
<td>Home</td>
<td>21.00</td>
<td>0.02 *</td>
</tr>
<tr>
<td>Within teacher</td>
<td>22.00</td>
<td>0.16</td>
</tr>
<tr>
<td>Environmental</td>
<td>6.00</td>
<td>0.71</td>
</tr>
<tr>
<td>Interactional</td>
<td>36.00</td>
<td>0.01 *</td>
</tr>
<tr>
<td>Total number of attributions</td>
<td>22.50</td>
<td>1.00</td>
</tr>
</tbody>
</table>

* p<.05
Table 6.5 EPITs' attributions to "within-child" factors for the origins of the teacher's problem situation at time 1

<table>
<thead>
<tr>
<th>Category</th>
<th>N</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category 1 - Biological (N=3)</strong></td>
<td></td>
<td>• He can't hear properly (2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Medical condition (unspecified)</td>
</tr>
<tr>
<td><strong>Category 2 - Cognitive (N=4)</strong></td>
<td></td>
<td>• He finds learning difficult (i.e. he has general or specific learning problems) (2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• He has problems understanding instructions and communicating with his peers and adults</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• He has not got any strategies on how to interact appropriately with other children and adults</td>
</tr>
<tr>
<td><strong>Category 3 - Behavioural (N=8)</strong></td>
<td></td>
<td>• He is non-compliant and has behavioural problems (2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Inability to form positive relationships with his peers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Michael's behaviour suggests that he lacks social skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Michael has behaviour problems</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Disruptive behaviour</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Avoidance strategies and bad behaviour - bad attitude (2)</td>
</tr>
</tbody>
</table>

**Note:** Numbers in brackets refer to the number of EPITs who made the exact or similar comment.
Table 6.6 Controls' attributions to "within-child" factors for the origins of the teacher's problem situation at time 1

<table>
<thead>
<tr>
<th>Category</th>
<th>Biological (N=2)</th>
<th>Cognitive (N=3)</th>
<th>Behavioural (N=5)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Medical and concentration problems - hearing</td>
<td>- Unaware of boundaries or rules (2)</td>
<td>- Aggression through frustration (2)</td>
</tr>
<tr>
<td></td>
<td>Michael may have a genuine psychological/physiological disorder over which he has little or no control</td>
<td>- Real self-esteem issues</td>
<td>- Michael may behave this way at home and view it as acceptable</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Bad behaviour (2)</td>
</tr>
</tbody>
</table>

Note: Numbers in brackets refer to the number of controls' who made the exact or similar comment.
Table 6.7 EPITs' attributions to "within-child" factors for the origins of the teacher's problem situation at time 2

<table>
<thead>
<tr>
<th>Category</th>
<th>Number (N)</th>
<th>Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1 - Biological (N=3)</td>
<td></td>
<td>• Hearing difficulties (2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• ADHD!</td>
</tr>
<tr>
<td>Category 2 - Cognitive (N=6)</td>
<td></td>
<td>• Brian has learnt that by behaving badly he gains attention (2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Social skills (no friends in class, has difficulties interacting)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Low self-esteem, poor self-confidence as a learner</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lack of motivation (2)</td>
</tr>
<tr>
<td>Category 3 - Behavioural (N=3)</td>
<td></td>
<td>• Poor social skills - this is impacting upon his behaviour towards his peer group and adults (2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Brian has some difficulties with basic skills which is making it difficult for him to access the curriculum</td>
</tr>
</tbody>
</table>

Note: Numbers in brackets refer to the number of EPITs' who made the exact or similar comment.
Table 6.8 Controls' attributions to "within-child" factors for the origins of the teacher's problem situation at time 2

<table>
<thead>
<tr>
<th>Category</th>
<th>Count (N)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1 - Biological (N=1)</td>
<td></td>
<td>· Hearing dysfunction</td>
</tr>
<tr>
<td>Category 2 - Cognitive (N=7)</td>
<td></td>
<td>· Poor literacy level</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· Brian's low self-esteem (2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· Poor self-awareness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· Poor social awareness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· Poor communication skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· Need for positive or negative attention (whichever is easier)</td>
</tr>
<tr>
<td>Category 3 - Behavioural (N=6)</td>
<td></td>
<td>· Attention-seeking behaviour (2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· Short temper (2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· Frustrated and aggressive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· Copying bad role model (i.e. cousin's bad behaviour)</td>
</tr>
</tbody>
</table>

Note: Numbers in brackets refer to the number of controls who made the exact or similar comment.
Table 6.9 EPITs' and controls' attributions to "home" factors for the origins of the teacher's problem situation at time 1

<table>
<thead>
<tr>
<th>EPITs (N=11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Perhaps parental support is lacking because Mrs Toliver is unsure how to respond to her son's difficulties (2)</td>
</tr>
<tr>
<td>• Michael sounds as if he has had little support or stimulation at home (2)</td>
</tr>
<tr>
<td>• Negative attitude from home, he could have missed out on important academic and socialisation skills early on in his school life</td>
</tr>
<tr>
<td>• Michael's mother and grandmother expect the school to deal with behaviour problems and are not supportive or helpful</td>
</tr>
<tr>
<td>• Michael's &quot;dubious&quot; discipline at home (his father-figure issuing &quot;over-the-top&quot; discipline)</td>
</tr>
<tr>
<td>• Supervision at home is not seen as consistent</td>
</tr>
<tr>
<td>• Michael receives little attention at home (Mum single with more than one job)</td>
</tr>
<tr>
<td>• He has a particularly unstable background and home life (2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Controls (N=16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Possibly a lack of attention at home and inconsistent implementation of &quot;boundaries&quot;</td>
</tr>
<tr>
<td>- unstable relationship between mother and &quot;boyfriend&quot; (4)</td>
</tr>
<tr>
<td>• His father's absence: he rarely sees him and we will need to look into where his father has gone (3)</td>
</tr>
<tr>
<td>• Lack of attention: his mother has to work and he spends most of his time with grandma or walking the streets</td>
</tr>
<tr>
<td>• Parents may not have time to correct Michael's behaviour or engage in meaningful talk with him about his behaviour or work in school (3)</td>
</tr>
<tr>
<td>• Parents may be disillusioned with school and education</td>
</tr>
<tr>
<td>• Lack of care, supervision and attention from Michael's immediate family (5)</td>
</tr>
</tbody>
</table>

Note: Numbers in brackets refer to the number of EPITs' and controls' who made the exact or similar comment.
Table 6.10 EPITs' and controls' attributions to "home" factors for the origins of the teacher's problem situation at time 2

EPITs (N=1)

- Brian is unhappy at home and is therefore unable to concentrate at school

Controls (N=16)

- Home background (2)
- There is little attention coming from the home (2)
- Stems from his family life (mother works long hours, often not at home, his father is not around)
- No loving, caring home-based relationships, no support (2)
- Family disunion, lack of structure (2)
- Dad is not present for Brian
- Mother working (4)
- Family influences (2)

Note: Numbers in brackets refer to the number of EPITs' and controls' who made the exact or similar comment.
Table 6.11 EPITs' and controls' attributions to "teacher" factors for the origins of the teacher's problem situation at time 1

<table>
<thead>
<tr>
<th>EPITs (N=13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Teacher training did not prepare Anne (teacher) for managing her class</td>
</tr>
<tr>
<td>• Anne lacks confidence in her ability to cope</td>
</tr>
<tr>
<td>• The class teacher at times manages his behaviour well and did suggest positive strategies, at other times she felt she resents him</td>
</tr>
<tr>
<td>• The teacher's stress is caused by her feelings of inability to deal with Michael's behaviour (2)</td>
</tr>
<tr>
<td>• The teacher lacks experience (3)</td>
</tr>
<tr>
<td>• She has a negative attitude to Michael</td>
</tr>
<tr>
<td>• Looks at problems as Michael's not one of classroom management</td>
</tr>
<tr>
<td>• Seems to feel she lacks power</td>
</tr>
<tr>
<td>• Is not asserting herself</td>
</tr>
<tr>
<td>• Seems open to ideas but finds lots of reasons why not to do things</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Controls (N=5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Teacher not giving Michael enough attention (2)</td>
</tr>
<tr>
<td>• Michael's teacher has not yet identified any strengths</td>
</tr>
<tr>
<td>• Teacher highlights his weaknesses</td>
</tr>
<tr>
<td>• Teacher's stress affecting Michael's behaviour</td>
</tr>
</tbody>
</table>

Note: Numbers in brackets refer to the number of EPITs' and controls' who made the exact or similar comment.
Table 6.12 EPITs' and controls' attributions to "teacher" factors for the origins of the teacher's problem situation at time 2

<table>
<thead>
<tr>
<th>EPITs (N=7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Class teacher's lack of confidence (3)</td>
</tr>
<tr>
<td>• Teacher unable to control class and Brian in particular - inappropriate classroom management (2)</td>
</tr>
<tr>
<td>• Teacher is inconsistent</td>
</tr>
<tr>
<td>• The class teacher's level of stress - this is impacting on her ability to work with Brian in an objective way</td>
</tr>
<tr>
<td>• Relative inexperience of teacher</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Controls (N=5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Teacher's lack of skill/management (2)</td>
</tr>
<tr>
<td>• Class teacher not able to find Brian's levels in terms of academic work or behaviour, needs help</td>
</tr>
<tr>
<td>• His teacher is becoming increasingly stressed which is contributing to her problems with Brian (2)</td>
</tr>
</tbody>
</table>

Note: Numbers in brackets refer to the number of EPITs' and controls' who made the exact or similar comment.
Table 6.13 EPITs' and controls' attributions to "environmental" factors for the origins of the teacher's problem situation at time 1

EPITs (N=2)
- It may also be caused by a lack of appropriate support for the teacher within the school
- The school has no clear guidelines for dealing with behavioural problems

Controls (N=4)
- The class is too large and has a lot of problems (3)
- Headteacher/senior teacher not providing enough support

Note: Numbers in brackets refer to the number of EPITs' and controls' who made the exact or similar comment.
Table 6.14 EPITs' and controls' attributions to "environmental" factors for the origins of the teacher's problem situation at time 2

<table>
<thead>
<tr>
<th>EPITs (N=4)</th>
<th>Controls (N=6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Lack of support from colleagues (2)</td>
<td>• Whole school ethos a problem, school needs an EBD (emotional and behavioural difficulties) policy</td>
</tr>
<tr>
<td>• 35 children with a wide variety of needs (2)</td>
<td>• Role of SENCo advising teacher, she needs to give the teacher realistic and achievable goals</td>
</tr>
<tr>
<td></td>
<td>• Teaching assistant needs training in how to use strategies with Brian</td>
</tr>
<tr>
<td></td>
<td>• Lack of appropriate guidance from Headteacher (2)</td>
</tr>
<tr>
<td></td>
<td>• The presence of 35 children within the class is quite obviously contributing to the problem</td>
</tr>
</tbody>
</table>

Note: Numbers in brackets refer to the number of EPITs' and controls' who made the exact or similar comment.
Table 6.15 EPITs' and controls' attributions to "interactional" factors for the origins of the teacher's problem situation at time 1

<table>
<thead>
<tr>
<th>EPITs (N=1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- He (Michael) is often &quot;unkempt&quot; when he arrives at school which is a source of teasing for him, as a result he becomes upset and over-reacts</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Controls (N=0)</th>
</tr>
</thead>
</table>

Note: Numbers in brackets refer to the number of EPITs' and controls' who made the exact or similar comment.


<table>
<thead>
<tr>
<th>Table 6.16</th>
<th>EPITs' and controls' attributions to &quot;interactional&quot; factors for the Origins of the teacher's problem situation at time 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPITs (N=15)</strong></td>
<td></td>
</tr>
<tr>
<td>• Brian's problems may be caused by a lack of adequate curriculum differentiation which results in both frustration and boredom. This is compounded by the teacher's lack of consistent classroom management skills, she ends up stressed (4)</td>
<td></td>
</tr>
<tr>
<td>• Low self-esteem issues interact with limited social skilfulness which contributes to him [Brian] being isolated and teased (name-calling) which results in him over-reacting to gain attention/approval from peers and adults. Unfortunately both groups seem to be ignoring him or giving him negative attention which starts the cycle (2)</td>
<td></td>
</tr>
<tr>
<td>• It appears that Brian begins to over-react and disrupt lessons when he is supposed to be working. It is suggested that worksheets may not be appropriate for Brian and as a result he becomes frustrated when given work that is not suitable (2)</td>
<td></td>
</tr>
<tr>
<td>• His isolation from positive work groups could be affecting the ways peers perceive him and his disruptive behaviour may compound such impressions</td>
<td></td>
</tr>
<tr>
<td>• If the teacher actively restructured the way she manages and organises work related to Brian this may improve his behaviour and could affect how his peers perceive him</td>
<td></td>
</tr>
<tr>
<td>• The poor home-school communication is affecting how both parties manage Brian. This lack of consistency may be contributing to his inappropriate behaviour (3)</td>
<td></td>
</tr>
<tr>
<td>• The teacher's lack of experience and the limited support she has received (i.e. strategies) has resulted in stress; this has reduced her objectivity and results in a lack of planning and consistency for Brian and the class which contributes to his frustration and aggression (2)</td>
<td></td>
</tr>
<tr>
<td><strong>Controls (N=3)</strong></td>
<td></td>
</tr>
<tr>
<td>• Brian becomes frustrated because he is unable to do things that his peers can do, although he is able. This results in frustration which comes out as aggression (2)</td>
<td></td>
</tr>
<tr>
<td>• The teacher is becoming increasingly stressed and this results in a lack of detachment and contributes to Brian's over-reacting</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Numbers in brackets refer to the number of EPITs' and controls' who made the exact or similar comment.
6.4. RESULTS AND DISCUSSION

In study two (b) it was assumed that when participants formulated their responses to section three of the written problem analysis questionnaire they did so by generating a range of possible causal attributions to try to integrate aspects of the teacher's problem situation. It was hypothesised that before the start of training both EPITs and controls would not differ in the number and type of hypotheses they used. Furthermore the types of hypotheses utilised would be similar to those observed in previous research with teachers, namely they would largely be based upon attributing causation to "within-child" and "home" factors (Croll & Moses, 1985; Miller, 1996). It was predicted that training would alter this pattern so that by the end of the course EPITs would be employing significantly more "interactional" hypotheses and fewer "home" and "within-child" factors when trying to integrate aspects of the teacher's problem situation.

Accessible reasoning, as an interviewer strategy, is one way for interviewers to share and check out their developing understandings (hypotheses) with the teacher during an initial interview. The results detailed in study two showed that the use of accessible reasoning was significantly associated with the subsequent quality of the interviewer's understanding of the teacher's problem. Interviewer hypotheses are based upon the information the teacher shares during the interview, the interviewer's own experience and knowledge of similar situations, and psychological theory and research. Research outlined in chapter two indicated that expert problem solvers used about the same number of hypotheses as novices, but differed in the type of hypotheses used and the connection or links made between different aspects of the problem (Elstein et al, 1990).

Study one indicated that the majority of training courses in England, Wales and Northern Ireland teach hypothesis-testing frameworks to guide interviewing and problem solving. This is true of the UCL course which the EPIT sample was taken from and where hypothesis-testing and causal modelling frameworks are taught (Monsen et al, 1998; Morton & Frith, 1995). The current study investigated whether training had any impact on the number and type of hypotheses used by EPITs by analysing written summaries of their understanding of how different aspects of the teachers problem could be connected or linked.
6.4.1. Comparability of participants on number and type of hypotheses used

6.4.1.1. Comparisons of EPITs and controls at time 1

Table 6.2 presents a comparison of the medians and interquartile ranges for both groups on the nine measures used at time 1. Results indicate that the EPIT group located 62% of causal factors either to "within-child" or "home" based factors. A further 31% were located to "within-teacher" factors, 5% were located "within-environmental" factors and only 2% were conceptualised as involving any form of "interactional" causation.

Results for the control group indicate that they located 75% of causal factors either to "within-child" or "home" based factors. A further 14% were located to "within-teacher" factors, 11% were located "within-environmental" factors and there were no "interactional" causes offered.

Tables 6.5, 6.6, 6.9 and 6.11 present compilations of EPIT and control groups' actual responses at time 1 to "within-child", "home" and "teacher" factors. For "within-child" factors both groups located the majority of causes at the behavioural level with 19% of EPIT and 14% of control responses being so coded. These intergroup differences were not found to be significant. Tables 6.13 and 6.15 present further compilations of EPIT and control actual responses to "environmental" and "interactional" factors.

Table 6.3 presents between group analyses (Mann-Whitney) of these median scores and suggests that at time 1 there was a significant difference observed between the two groups on only one of the nine measures used. Results show that at time 1 the EPIT group attributed significantly less causal factors to the "home" than the control group (EPIT group time 1, 26%; control group time 1, 46%; U = 16.50, p < .05). Results indicate that there were no significant differences in the number of hypotheses used by both groups.

This result could be attributed to the fact that the two groups were not in fact exactly the same at time 1. The EPIT group had recently resigned from their teaching positions so that they could embark upon a new career and leave teaching behind them. The control group on the other hand were still very much in role as classroom teachers. Perhaps over the summer break before the EPITs started training and when they were doing the recommended reading tasks their views regarding the role the child's home
plays in causing school-based problems altered.

6.4.1.2. Comparisons of EPITs and controls at time 2

Table 6.2 presents a comparison of the medians and interquartile ranges for both groups on the nine measures used at time 2. Some nine months later the EPIT group now located only 34% of causal factors either to "within-child" or "home" based factors. A further 18% were located to "within-teacher" factors and now 39% were conceptualised as involving some form of "interactional" cause. On the other hand the control group still located the majority (67%) of its causal factors to either "within-child" or "home" based factors. A further 11% were located to "within-teacher" factors and only 7% were identified as involving any form of "interactional" causes.

Tables 6.7, 6.8, 6.10, and 6.12 present compilations of EPIT and control groups' actual responses at time 2 to "within-child", "home" and "teacher" factors. For "within-child" factors both groups located the majority of causes at the cognitive level with 15% of EPIT and 16% of control responses being so coded. These intergroup differences were not found to be significant. Tables 6.14 and 6.16 present further compilations of EPIT and control actual responses to "environmental" and "interactional" factors.

Table 6.3 presents between group analyses (Mann-Whitney) of these median scores and suggests that at time 2 there was a significant difference observed between the two groups on two of the nine measures used. Results show that at time 2 the EPIT group attributed significantly less causal factors to the "home" than the control group (EPIT group time 2, 3%; control group time 2, 36%; U = 7.50, p < .05), and significantly more causal factors to interactional factors (EPIT group time 2, 39%; control group time 2, 7%; U = 14.00, p < .05). Results indicate that there were no significant differences in the number of hypotheses that both groups used.

Results show that the trend observed at time 1, where the EPIT group located significantly less causal factors as originating from the "home" has continued. By the end of training EPITs are in comparison to the control group using significantly less "home" based factors to explain the teacher's problem situation. In addition by the end of training the EPIT group is in comparison to the control group now using significantly more "interactional" explanations to try to understand the causes of the teacher's problem.
situation.

6.4.1.3. Within group comparisons between time 1 and time 2

Table 6.4 presents the results of within group comparisons (Wilcoxon test). Results indicate that there were no significant differences observed for the control group. The number and type of hypotheses used to integrate the teacher's problem situation remained unchanged. Results from study two indicated that the control group's quality of problem understanding also did not significantly change between time 1 and time 2, overall scores indicating poorer quality analyses.

Results for the EPIT group indicate that following training there were significant differences noted in the type of hypotheses used to locate the possible causes of the teacher's problem situation. There were no significant differences observed in the number of hypotheses being used. Following training EPITs were significantly less likely to use solely "home" based hypotheses to explain difficulties (W = 21.00, p < .05), and were significantly more likely to use "interactional" hypotheses to connect and link aspects of the teacher's problem situation (W = 36.00, p < .05). Interactional hypotheses involve a more complex linking of biological, cognitive, behavioural, home, teacher, and environmental aspects (e.g., problem-analysis framework, Monsen et al, 1998; Morton & Firth, 1995).

Summary of hypotheses

The research question asked of the data at time 1, before the start of training was:

1. Are the two groups of participants actually comparable on measures of number and type of hypotheses?

Data collected and summarised provided **partial support** for the following hypothesis:

1.1. That there would be no significant differences between the two groups of participants in both the number and type of hypotheses used. Though there was no significant difference in the number of hypotheses that both groups used, at time 1 the EPIT group located significantly less causal factors within the "home" than the control group.
Data collected and summarised provided support for the following hypothesis:

1.1. That both groups would be using mainly "within-child" and/or "home" based hypotheses to integrate aspects of the teacher's problem situation. Data showed that both groups tended to locate the majority of causes to either "within-child" and/or "home" based factors.

The research question asked of the data at time 2, near the end of training was:

1. Are the two groups of participants actually comparable on measures of number and type of hypotheses?

Data collected and summarised provided support for the following hypothesis:

1.3. That there would be no significant difference between the two groups of participants in the number of hypotheses used;

1.4. That there would be a significant difference between the two groups of participants in the type of hypotheses used to integrate aspects of the teacher's problem situation;

1.5. That the EPIT group would be using significantly more interactional hypotheses than the control group.

6.5. LIMITATIONS OF STUDY TWO (B)

The next section will outline some of the limitations related to study two (b) and thus place any conclusions within a more cautious context. There are a number of possible constraints which could have limited study two (b)'s reliability, validity and generalisability. Leedy (1980) has written that one of the major purposes of research is that it should be able to be repeated by any other researcher at any other time under precisely the same conditions.
6.5.1. Issues to consider

Sample size
As with the previous three studies reported within this thesis the relatively small sample size is the most obvious and arguably the most significant constraint to the generalisability of the present results. A small sample size could have affected the results in the following ways:

*Statistical significance*
The use of relatively small numbers of participants (e.g., 18 in total) reduces the power and generalisation of the statistical tests used. This constraint could possibly be overcome by using a much larger sample and perhaps collapsing some of the coding categories together. One possible result of this would be an increase in the statistical power of any tests used.

*Representativeness of sample*
As highlighted in the other studies an important question concerns the degree to which the EPIT group and the results obtained were generalisable to other EPITs on similar courses. Study two (b) assumed that, despite the small sample size, the EPITs were representative of the larger population of EPITs, and that the results would be generalisable. However, sample representativeness is acknowledged as a challenge to the generalisability of the findings of study two (b).

*Research design*
The research design used in study two (b) relied upon an analysis of participants' written responses to section three of the problem analysis questionnaires used in study two at time 1 and time 2 (Questionnaire B). It was hypothesised on the basis of previous research that training would alter the type of causal hypotheses that EPITs would use to integrate aspects of the teacher's problem situation. Training in problem analysis and related skills (i.e. causal modelling) would mean that EPITs would be more likely to employ more "interactional" causal frames in attributing causation in trying to understand the teacher's problem situation.
Hawthorne effect and social desirability effect

The Hawthorne effect describes the degree to which participants' behaviour is influenced by the mere fact of participating in a research study. In study two (b) the participants' experiences of undertaking an initial interview, as if they were an educational psychologist, and the processes of thinking and writing a problem analysis may well have affected how they constructed their hypotheses.

The post interview tasks and in particular the problem analysis questions may well have led participants to answer in ways that they thought the researcher wanted, and in ways they thought were socially acceptable and pleasing (or not) to the researcher - the EPITs because they were still in training and wanted to be seen as competent, and the controls because they wanted to be seen as suitable for training. This view is challenged given the great degree of consistency found in the direction of the results when compared with previous studies (e.g., Croll & Moses, 1985). The Hawthorne effect and possible influence of social desirability as factors in limiting the study's efficacy is acknowledged but are not identified as significant sources of weakness.

6.6. CONCLUSIONS

In study two (b) measures were taken of both the number and type of written hypotheses which participants used to attribute causal relationships between aspects of the teacher's problem situation, after interviewing them. These measures were based on an analysis of section three of the problem analysis questionnaires written at the start and end of the training year as part of study two. Study two (b) was undertaken to see if training had an effect upon the number and type of hypotheses used by EPITs. This information was seen as being of potential relevance given the emphasis placed upon teaching hypothesis-testing frameworks and the literature cited in chapter two on the development of "expertness". Overall the results obtained at time 1, before the training course began, were very consistent with similar research carried out in the United Kingdom. Results indicated that in general both groups responded as teachers had in Croll and Moses' (1985) study, before the start of formal training (time 1). This is hardly surprising given that at this time the control group were still practising teachers and the EPIT group had...
only recently resigned their positions. Both groups did locate the majority of their causal attributions to either "within-child" or "home" based factors.

However, the pattern of responding was not totally as predicted with results highlighting one significant between group difference. The EPIT group was observed to locate significantly fewer causal attributions to "home" based factors than the controls (26% and 45% respectively). In addition to "within-child" factors (36%), EPITs tended to locate other causes fairly equally between "home" and "teacher" factors (i.e. 26% and 31% respectively). The control group on the other hand tended, in addition to "within-child" factors (29%), to locate causes mainly in the "home" rather than "within-teacher" factors (46% and 14% respectively). These results may be spurious ones resulting from the relatively small sample size, conversely it could be that once EPITs have made the decision to leave teaching they detach and reframe, conceptually at least, their understanding of the nature of the causes of school-based problems.

Results showed clearly that before training the use by either group of "interactional" hypotheses was extremely low (2% by EPIT group and 0% by the control group). Given the reservations outlined earlier at time 1 it was concluded that both groups were responding in similar ways to that of teachers in previous research. Rather than viewing the teacher's difficulties with Michael [Brian] as being located within a complex set of interrelated causes they tended to view the problem situation as just a "problem", with the factors involved being located within either "within-child" or the "home". As observed in Hammersley's study (1984) the qualitative responses given by both EPITs and control to the "home" adopt a largely judgmental and punitive tone (e.g., "...Mum single with more than one job", "...dubious discipline", "...unstable background and homelife").

These results are consistent with the views expressed by Hammersley (1984) and Gill and Monsen (1996) when they talk about the need for teachers to deflect ownership of problem causation away from factors which they may have some control over. Instead, perhaps to keep a sense of "professional esteem" and competence, they attribute the causes of the problem they are experiencing to either "within" the child (i.e. illness, psychological disturbance or personality) or to the "home" (i.e. bad parenting, lack of interest, unstable) - both locations are places beyond their immediate influence.
The rationale for undertaking study two (b) was to see whether training had an effect on the types of hypotheses EPITs used to integrate aspects of the teacher's problem situation, at time 2 near the end of the training year results indicated a very different picture to that of time 1. The results obtained for the control group were very consistent with those obtained at time 1. The control group's pattern of responding was similar to that of the teachers in Croll and Moses' (1985) study. The EPIT group on the other hand were much less likely to locate causes for the teacher's problem situation within the "home" ("6% at time 1 and 3% at time 2) and were significantly more likely to conceptualise the causes of the problem situation using "interactional" factors (2% at time 1 and 39% at time 2). These results support the conclusion that training had a significant impact on the way EPITs went about the task of trying to understand a teacher's complex and ill-defined problem situation. By the end of the training year EPITs are still just as likely to identify causes as being located "within" the child, within the "teacher", and in the environment. The crucial difference is that now they are also conceptualising the causes of the teacher's problem in a more complex and interactional manner with a number of aspects being linked together rather than just being based in "within-child" or the "home".

By the end of training EPITs are now more likely to view the teacher's difficulties with Michael [Brian] as being located within a complex set of interrelated causes (a true problem situation) rather than being located within either a problem child or a problem home. The qualitative responses given by EPITs have also altered with only one home-based cause given at time 2 which was less judgmental and punitive than at time 1 (e.g., "Brian is unhappy at home and is therefore unable to concentrate"). The control group's responses are still largely judgmental and punitive in tone (e.g., "...No loving/caring..."Mother is working...").

The results for the control group are still consistent with the views expressed by Hammersley (1984) and Gill and Monsen (1996) with this group still deflecting ownership of problem causation away from factors which they may have some control over. By the end of training to be educational psychologists the EPIT group is more likely to view problem causation as involving a set of interrelating aspects originating from the child, the teacher, the home and the environment rather than seeing problems...
as solely being caused by child or home factors. These results support the conclusion that training does make a difference not so much to the number of causal hypotheses generated but to how various hypotheses are linked and connected in written arguments for the possible causes of the teacher's problem situation.
CHAPTER SEVEN

STUDY THREE: A descriptive investigation of course tutors reactions to some of the main findings of the research studies described within this thesis

"You have learned the value of being able to ask questions. You have learned the importance of finding out what people have to say. You are ready now to return to the world..." (From Halcolm's epistemological parables, cited in Patton (1990) p.278)

7.1. RATIONALE AND AIMS FOR STUDY THREE

Study three represents the final investigation to be outlined within this thesis. It can be seen to provide a means of validating and integrating some of the main findings of this thesis. In addition it provides a useful way of exploring the impact that this thesis could have on both theoretical and practical issues surrounding the conceptualisation and teaching of problem understanding within interviewing. Study three then comes full circle and returns to investigate the reactions, to some of the main findings of this thesis of a sample of the course tutors who were first involved in the postal questionnaire survey described in study one (chapter three).

The discussion in chapter three highlighted a number of significant reservations around the reliability and validity of the data collected through a questionnaire survey. Study one employed a standardised postal questionnaire using predominately closed questions to obtain the reactions and views of course tutors to a range of issues focused on the conceptualisation, content and teaching of interviewing and problem solving skills. Using a closed format may have lead respondents to endorse a category that greatly oversimplified or significantly misrepresented what was actually happening (i.e. "Sharing one's thinking out loud" did this actually mean the same as "accessible reasoning"?).

One of the main limitations of using standardised questionnaire surveys is that the areas of interest are predetermined by the researcher who relies upon the anonymous reports of respondents. Study one did not directly approach course tutors and seek their own views and opinions or indeed their accounts of what were important considerations
when teaching EPITs interviewing and problem solving skills.

Study one concluded on the basis of its findings that the vast majority of courses in England, Wales and Northern Ireland were effectively employing an hypothesis-testing framework and teaching their EPITs "accessible reasoning". Unfortunately we have no way to gauge whether this rather positive and indeed optimistic view of training is actually valid. As such study one sampled what Arygris and Schöen (1974, 1996) refer to as respondents "espoused theories" or what they say was happening on their respective courses.

On hindsight it would have been more illuminating, in terms of providing other perspectives and a much richer picture of course tutors views if follow-up interviews had been conducted alongside data collected using more restricted and standardised response modes (Miller, 1996, p.77). By combining these two approaches it would have been possible to triangulate findings, to generate themes and issues for further explorations and to have provided a depth and richness of insight (Silverman, 1993).

This being said then the current study performs an important function within the structure of the thesis as a whole. It enables some of the concerns outlined in study one to be addressed by actively seeking, via semi-structured face-to-face interviews, course tutors reactions to some of the major findings of the four investigations which make up this thesis. In this way it is hoped to both illuminate and challenge some of the conclusions reached.

7.1.1. Summary of the main findings derived from this thesis

Study one indicated that the majority of course tutors in England, Wales and Northern Ireland claimed to teach an hypothesis-testing framework to guide interviewing and problem solving. All tutors rated interviewing and problem solving skills to be very important to the work of educational psychologists. In addition the majority of tutors reported that they taught accessible reasoning (or semantic variants of it) to the EPITs on their courses. However, there was no way to collaborate whether, at a theory-in-use level, courses actually did the things they reported that they were doing (Arygris & Schöen 1974, 1996).

One of the aims of study two (and by association study 2 (a) and study 2(b)) was
to therefore investigate aspects of the theory-in-use of one particular training course for educational psychologists (i.e. UCL). The results of this study replicated and extended earlier research by Robinson and Halliday (1988) and showed a particularly robust relationship between the use of accessible reasoning by EPITs' during an initial teacher interview and the subsequent quality of their understanding of the teacher's problem situation. **Study two (a)** explored whether factors such as EPITs' personality and communication style added anything to our understanding of the processes involved in problem reasoning. No significant relationships were observed, except that at the end of the training year EPITs were more neurotic than the control group. Unfortunately because no pre-measures were taken we do not know what the groups were like before training started. **Study two (b)** investigated the importance of psychological knowledge and perspectives in facilitating effective problem solving. The results showed that following training the number of hypotheses used by EPITs did not change but the type did, with EPITs using significantly more interactional hypotheses to integrate and explain aspects of the teacher's problem situation within their problem analyses.

### 7.1.2. Research questions

Study three explores the reactions of a sample of course tutors to some of the main findings of this thesis. The following research questions guided the construction of interview questions:

1. Would other course tutors share the same understandings as the researcher of some of the key concepts used within this thesis (e.g., hypothesis-testing framework, accessible reasoning) as had been assumed in study one?

2. Would course tutors be able to outline how they went about teaching hypothesis-testing and accessible reasoning on their courses, in a way that provided triangulated evidence which supported their "espoused theories"?

3. What would tutors reactions be to some of the main findings of the four investigations undertaken within this thesis and what would they identify as their
potential implications for training and practice?

To address these questions and move beyond the constraints imposed by the questionnaire survey the final phase of this thesis used a series of face-to-face semi-structured interviews to gauge course tutors reactions.

7.2. METHOD

7.2.1. Structure of investigations

A modified version of Kvale's (1996) seven-staged framework to guide interview inquiry proved helpful to the researcher in guiding the research stages from original idea to write-up. Kvale's (ibid) seven-staged framework is in contrast to the more interactive approaches described by Strauss and Corbin (1990, 1998). Their grounded theory method is less formal than the seven-staged framework and stresses the "continual interplay among conceptualisation, field studies, analyses and new contacts with the field" (Kvale, 1996, p.87). Grounded theory approaches would have been more suitable if the researcher was using an unstructured interview format which was attempting to build up categories and themes from scratch. Kvale's framework was chosen because the researcher was using a semi-structured interview proforma with predetermined categories and standard questions. For the purposes of study three the following six-stages (based upon Kvale's (1996) seven) were used to guide the researchers investigations. Strauss and Corbin (1998) were none-the-less helpful, especially when it came to writing up the results as they stressed that direct quotes should only be used to quote something important. The stages will be briefly outlined in the following section as they are referred to in more detail in subsequent pages:

1. **Thematizing.** This stage refers to the often agonising process of formulating the rational and purpose of the study. At this stage it was important to clarify the *why* and *what* of the investigation. The researcher spent considerable time reflecting upon the short comings of study one and in looking at how the various investigations reported
within the thesis linked together. Study three was seen as providing a means of validating and integrating some of the main findings in a way that gave a sense of closure to the thesis as a whole. This thinking occurred before questions of how (or method) were explored.

2. Designing. This stage involved the researcher designing the structure of the whole study with consideration being given to the interrelationship of all of the stages within the process. A semi-structured interview proforma was designed and initially piloted on two course tutors who were not involved in the final study. Feedback from these tutors enabled modifications to be made to the sequence and wording of some of the questions. Decisions were made about the number of course tutors to be interviewed (in the end six or 46% of the sample of course tutors surveyed in study one were interviewed), the logistics of arranging interview appointments, travel arrangements, checking of equipment (i.e. tape recorder, microphones, tapes and so on) and locations were all organised.

3. Interviewing. All the interviews were conducted by the researcher using the interview proforma or interview guide (please refer to Appendix Four for a copy of this proforma). All interviews were tape recorded with the interviewer adopting a reflective approach to the information obtained and the interpersonal dynamics of the interview situation. A reflective-analytical approach was defined within Dewey's (1933) terms as meaning "Thoughts that result in belief have an importance attached to them which leads to reflective thought, to conscious inquiry into the nature, conditions, and bearings of the belief" (p.5). This resulted in the interviewer using critical dialogue skills to check out understandings and seek examples to illuminate points.

4. Transcribing. The interview tape recordings were transcribed with clear instructions being given to the typist not to change or correct speech and to type exactly what they heard. A random sample of two transcripts were compared against their original audio recordings as a quality assurance check. Results indicated near perfect transcriptions had been made. In preparing transcripts for analysis every line of dialogue was numbered for
5. Analyzing. A standard set of 14 questions were asked to each of the six course tutors. The use of a semi-structured interview format greatly assisted analysis as each of the tutors' responses could be compared and contrasted under the same set of headings.

6. Reporting. It was important to present the findings of the investigation in a coherent and logical manner which illuminated the questions being asked. It was vital not to bore the reader with uninteresting quotes or statements that were trivial, obvious or trite. As such in this chapter direct quotes were only included if they clearly illustrated or supported the points or arguments being made (Strauss & Corbin, 1998).

7.2.2. Descriptive characteristics of the course tutor sample

In Study One, 13 out of the 14 training course tutors contacted responded to the postal questionnaire. For the purposes of Study Three, 6 of this original group of 13 tutors surveyed were contacted, making a sub-sample of 46%. Initial contact with the tutors was made by telephone (and e-mail) with a follow-up letter being sent to them about a week before their interview was scheduled (See Appendix Four for a copy of the covering letter).

The covering letter outlined in general terms the purpose of the interview and what would be required of the tutors. Tutors were given the option of contacting the researcher if they had any questions or queries, but none did so. This is not surprising as each tutor had a personal telephone conversation with the researcher in which the purpose and benefits of participating in the study were discussed. The only significant constraints raised during these discussions centred around the logistics of arranging mutually agreeable interview slots, given the work demands of both course tutors and the researcher and the travelling distances involved for the researcher to be able to interview some of the tutors (the mean travelling distance was about 342 miles – round trip).

In Study One the request was for the questionnaire to be completed by the tutor who had greatest involvement in teaching interviewing and problem solving skills on the course. Once again in study three the participation was sought of the tutor who had
greatest familiarity with these topics as they were likely to be the most reliable informants. Of the six course tutors interviewed only one was male (17% of sample) and five were female (83% of sample). Four of the tutors were directors of their respective training courses (67% of sample). Three tutors were based within the London area (50% of sample) and three were from training courses which sampled both the north of England and the west of England and Wales (50% of sample). Fifty percent (or 3 tutors) worked part of their week within a Local Authority psychological service with an equal number working full-time on university training courses or undertaking other work for some of their week (50% of sample). The median number of years of experience in the tutor role was 5 years (range between 2 and 30 years). Data for the number of years tutors were involved with teaching interviewing and /or problem solving were exactly the same (i.e. median of 5 years).

Such findings suggest that once tutors are identified as taking responsibility for particular aspects of EPIT training they tend to stick with them. This could have advantages in that tutors could develop a depth and breath of knowledge and skills over the years. Equally there could be a tendency for repetition and lethargy as interest and enthusiasm waxes and wanes over the years. As discussions will highlight in the following sections the majority of course tutors interviewed expressed interest and enthusiasm in the areas they taught.

7.2.3. Procedure
7.2.3.1. The interview setting
The six semi-structured interviews were conducted in a range of different locations. Two (33% of sample) were held in the researcher’s office, with the remainder (67% of sample) being located in either the course tutors offices or similar office type space. All interviews occurred in situations where there was minimal noise and disruption. The interviews were tape recorded using a standard portable field recorder designed for making high quality recordings of speech.

The guidelines provided by Patton (1990) for making high quality field recordings were followed (See Appendix Four for an amended copy of Patton’s (ibid) guidance notes) as were the guidelines on ethical considerations described by Kvale (1996) and
Patton (1990) (See Appendix Four for a compilation of these guidelines). Once the interviews were complete all the tape recordings were transcribed by a typist who was given the brief to transcribe exactly what they heard and number each line of the dialogue. This was done to assist in subsequent analyses.

7.2.3.2. The interview

The research interview has been defined by Cohen and Manion (1980) as "a two person conversation initiated by the interviewer for the specific purposes of obtaining research-relevant information, and focused by him on content specified by research objectives of systematic description, prediction or explanation" (p.241). The interview involves the collection of research information through the analysis of the dialogue held between the researcher and the interviewee. Such an approach allows for much greater conceptual depth than is achieved through other methods such as the standardised questionnaire used as part of study one. On the other hand interviews are prone to subjectivity and bias on the part of the interviewer (e.g., the interviewers manner can greatly influence the amount and type of information that is disclosed by the interviewee, also the interviewer can choose to ignore lines of inquiry offered by the interviewee). These potential constraints need to be actively monitored by the interviewer during the interviewing process (Silverman, 1993).

People are usually interviewed to find out from them things which cannot be directly observed. The issue in study three is not whether observational data is more desirable, valid, or meaningful than interview data. The central question underpinning this study - namely gauging course tutors reactions to the main findings of this thesis is more amenable to an approach which seeks to establish shared understandings and enables the meaning of questions and answers to be explored and clarified. As such the interviews were primarily focused upon what Cohen and Manion (1980) referred to as obtaining systematic description and explanation.

Because of the constraints imposed by the time allotted for each interview (interviews were usually no longer than about one hour) and by the nature of the research questions themselves (the need to sample similar information from each person interviewed) a semi-structured interview format was employed. The semi-structured
interview technique serves at least two main functions. First, it provides a means to explore what a tutor likes or dislikes (values and preferences), and what a tutor thinks (attitudes and beliefs). Second, taken alongside the other studies reported within this thesis it provides a fuller and richer understanding of some of the conclusions reached within this thesis through incorporating peer commentary, critique and reflection.

7.2.3.3. The interviewer - researcher

The interviewing style of the researcher is crucial to the success of the interview as a research device. Bruner (1990) makes this point when he is reflecting upon a series of family interviews conducted by a colleague, "subjects obviously responded in a fashion that reflected her "appreciative" style and, no doubt, would have reacted differently to an interviewer who was, say, more "formal" or whose persona was different in some other way or, simply, who was a man rather than a woman" (p.124). The important point here is that the researcher needs to conduct themselves in a way which encourages course tutors to reflect upon and share their reactions openly, honestly and fully. Given that the researcher was close to the data and had a vested interest in the research it was important for him to model a stance of openness to both the strengths but also to the potential concerns that tutors may raise.

The task of the interviewer then is to make it possible for the interviewee "to bring the interviewer into his or her world" (Patton, 1990, p.279). The quality of the information obtained during an interview will largely be determined by the skilfulness of the interviewer to do this. The assumption underpinning all interviewing is that the perspective of others is meaningful, knowable and able to be made explicit. Kvale (1996) proposed that for an interview to be productive, in terms of generating rich dialogue at least three criteria were needed:

1. Interviewee's answers needed to be as spontaneous, rich, specific and relevant as possible.

2. Interviewer's questions needed to be as short as possible with interviewee's answers being as long as possible.
3. The interviewer needed to follow up and clarify relevant aspects of the interviewees answers.

How then does an interviewer make sure that his or her behaviour, during the interview achieves the outcomes suggested by Kvale (ibid)? A number of sources were found helpful in this regard and the following section summaries material from the work of Miller (1996), Kvale (1996) and Rogers (cited in Cohen & Manion, 1980).

Firstly, Miller (1996) suggests that the interviewer needs to adopt an interpersonal style of encouragement, reflection and elaboration when interviewing. Miller (ibid) refers to the work of Cannel and Kahn (1968) and their suggestion that the interviewer is aiming to "create and maintain an atmosphere in which respondents feels that he or she is fully understood and in which it is safe to communicate fully without fear of being judged, criticised or subsequently identified and disadvantaged" (Miller, 1996, p.78-79).

Secondly, Kvale (1996) suggests that the interviewer needs to be:

1. **Knowledgeable.** The interviewer needs to know their topic so that they can hold and sustain an informed conversation. In study three the researcher was exploring with course tutors the findings of their own research so this criteria was more than satisfied.

2. **Structured and clear.** The interviewer needs to introduce the purpose of the interview, outline the procedures, and round off the interview, by for example, summarising what they have learnt and asking for any feedback or further comments or questions from the interviewee. The use of a semi-structured interview proforma or guide in study three provided the necessary structure and clarity. However, the use of probe questions brought in an element of flexibility and responsiveness.

3. **A careful listener.** The interviewer needs to listen carefully to the content of what is said, listening for the "many nuances of meaning in an answer", and seeking to get such meanings described more fully. The use of flexible probe
questions tailored to each interviewee assisted listening and clarity.

4. **A critical listener.** The interviewer "does not take everything that is said at face value", but needs to question critically to test the reliability and validity of what the interviewee shares. This critical checking focuses on both logical consistency and to observational evidence. Here interviewer use of accessible reasoning to structure probe questions assisted critical thinking.

5. **Monitor.** The interviewer needs to retain what the interviewee has disclosed to them during the interview. This is achieved by the interviewer checking and relating back to the interviewee different parts of the interview with each other. It is important to clarify and extend what is shared, provide interpretations of what is said, which is then disconfirmed or confirmed by the interviewee. Once again interviewer use of accessible reasoning gave structure and purpose to the various probe questions asked during the six interviews.

Finally, certain ideas from the counselling literature on interviewing were found to be helpful in preparing – or mentally setting the researcher to undertake the interviews. In particular the notions of basing the interviewing relationship upon openness, in the sense that the interview process represents an honest and genuine attempt to explore reactions and views to the researcher's thesis; acceptance, in the sense that both the interviewer and interviewee respect each others views and positions and each takes responsibility for their own thoughts, feelings and reactions. That the interviewer adopts an interpersonal stance which encourages the interviewee to be as expansive and open as possible. Again the use of accessible reasoning was used to avoid communicating in a way which increased the likelihood of interviewee defensiveness.

### 7.2.3.4. Semi-structured interview format

Within the constraints imposed by using a semi-structured approach each interviewee is asked for the same types of information. The interview questions are prepared in advance and are written exactly as they are to be asked and in a prescribed order. Careful
consideration is given to the wording and position of each question and pilot studies are often used to fine tune wording, formats and sequences. In the strictest use of such a format even probe and follow-up questions are prescribed in the same manner. For the purposes of study three the main focus questions were prescribed but probe and follow-up questions were able to be tailored (within certain bounds) to the unique responses of each tutor. The guidance given was that probe and follow-up questions should be asked to clarify interviewee responses or to encourage fuller answers.

The core purpose of the semi-structured interview is to minimise the effects of interviewer bias by asking the same (or similar) set of questions of each interviewee. The interviews therefore take on a structure and logic which reduces the need for interviewer judgements to be made during the actual interview. Such an approach also makes data analysis much more straightforward because it is possible to locate interviewee responses to the same questions quickly and to organise answers that are similar.

7.2.3.5. *The semi-structured interview proforma*

All of the six course tutors were interviewed face-to-face using a semi-structured interview proforma. The interview guide followed a seven phase sequence listing 14 standard questions which were asked exactly as written to each tutor. The proforma provided some degree of flexibility in that the interviewer was able to ask probe and follow-up questions for clarity and to encourage the interviewee to be more expansive in their responses. This was seen as being important as one of the purposes of the interviews was to "access the perspective of the person being interviewed" (Patton, 1990, p.278). In addition space was provided on the proforma for notes to be made on themes or further probe questions the interviewer felt were relevant. The interview proforma was divided into the following seven phases:

**Phase one: Rapport building, introduction, purpose and confidentiality.** The purpose of this section was to make sure that the rationale and structure of the interview session was clear to each of the course tutors. The time available for the interviews was checked out and time was spent on general talk before beginning the "formal" interview. It was stressed to all tutors that as they were involved in teaching EPITs (or using) interviewing
and/or problem solving skills they were in a unique position to offer their reactions, views, thoughts, insights and reflections on some of the results of the researcher's thesis.

**Phase two: Background information.** This first set of questions asked tutors about their background and experience. The purpose of these questions was to assist the researcher build up a brief profile of the people being interviewed.

**Phase three: Reflections on study one.** The next set of questions was focused upon some of the main findings from the postal questionnaire survey of course tutors, in particular the use of hypothesis-testing frameworks and how these were taught. In addition questions asked for course tutor reactions to the finding that 85% of training courses taught "accessible reasoning" type skills, what did this finding mean to them and how did they approached such teaching on their course.

**Phase four: Reflections on study two.** The next group of questions looked at the main findings from study two which investigated the relationship between selected interviewer behaviours (open questions, closed questions, number of utterances and accessible reasoning), and problem understanding in a longitudinal experimental study of ten EPITs, and eight teachers who acted as controls. The results showed that, following training, EPIT use of accessible reasoning significantly increased during initial interviews, and was associated with "higher quality" written analyses of the teacher's presenting problem. Course tutors were asked for their reactions to this finding regarding the role that accessible reasoning may play in problem understanding, how the finding could be explained, and what were some of the implications for the training of educational psychologists.

**Phase five: Reflections on study two (a).** The next group of questions was focused upon some of the main findings of a study which explored whether interviewer personality characteristics (i.e. neuroticism, extroversion, openness, agreeableness, conscientiousness), and features of their communication style (i.e. effective, dominant and non-verbal) contributed anything to our knowledge of the processes involved in
formulating a "high quality" understanding. The results suggested that these aspects were not associated with the quality of interviewers' problem understanding, or their use of different interview strategies. The only difference noted was that EPITs were more neurotic than the controls when measured at the completion of training. Course tutors were asked for their reactions to these findings.

**Phase six: Reflections on study two (b).** The next group of questions was focused upon some of the main findings from a study which investigated whether training had an impact upon the number and type of hypotheses EPITs used to attribute causal relationships to aspects of the teacher's problem situation. Results showed that there were no significant changes in the number of hypotheses offered by either EPITs or controls. However, when the hypotheses were categorised, for example into those focused on the individual child, those focused on the learning environment and those focused on interactions between the two, it was found that by the end of training EPITs were significantly more likely than controls to use interactional hypotheses to attribute cause when integrating aspects of the teacher's problem situation. Once again course tutors were asked for their reactions to this finding.

**Phase seven: Closure.** Before the interview was formally closed each course tutor was asked if they wanted to make any final comments or ask any questions.

**7.2.4. Analyses of interview transcripts**

Stauss and Corbin (1998) make the point that there is no one correct way to analyse an interview transcript. The assumption underpinning study three was that the researcher was interested in learning something about course tutor's reactions and views towards specific findings derived from this thesis. Meaning (logical content analysis) is therefore central to trying to understand the responses obtained (Silverman, 1993).

The use of a semi-structured interview proforma greatly facilitates the process of analysing and interpreting interview transcripts - in that the use of standard questions asked to all interviewees enables different responses to be compared under the same question heading. Unique probe questions were asked to all interviewees and interpreting
these responses involves the researcher in attempting to capture the meanings given by the course tutors.

7.2.4.1. Steps to analysis and interpretation

Given that there is no one right approach to analysing interview transcripts it was therefore important to devise a defensible approach which was is keeping with the stated purposes of undertaking study three (i.e. using semi-structured interviews to gauge course tutors reactions to some of the main findings of this thesis), logical and consistent and did justice to the data collected.

The guidelines provided by Smith, Harré and Van Langenhove (1995) proved to be helpful to the researcher in approaching the vast amount of data collected from the six interviews and in justifying the strategies employed. The following nine steps or procedures were undertaken to progress from interview transcripts (raw data) to interpretation (analysis):

**Step 1.** Once all of the interview tapes were transcribed (including confidential interview code and line numbering) they were then photocopied twice. The importance of having two copies will become evident in step 8. The originals were then stored in a safe place.

**Step 2.** Using a semi-structured interview proforma greatly assisted the location within the transcripts of responses and in the logical ordering of the data collected (i.e. content-analysis). This was possible because the interview proforma had already provided the seven phases and the 14 distinct questions or thematic areas which were of interest to the researcher. In more open ended investigations the researcher has to systematically build up such categories or themes (see Miller, 1996, for an example of such a grounded theory approach). Each of these questions was then given a coloured folder with the question printed on the outside.

**Step 3.** Each phase of the transcript was then read several times. This enabled the researcher to gain a thorough overview of the data domain under each of the 14 questions and highlighted any themes or patterns. These were written down on a separate piece of
paper and proved to be useful when writing up the results.

**Step 4.** Each transcript was then re-read thoroughly and dissected. This was achieved by using different coloured highlighting pens to separate out interviewee responses to the 14 questions (and if relevant responses to the probe questions under these theme areas).

**Step 5.** The separate interviewee responses were then numbered with their code and cut from the main body of the transcript and placed in one of the 14 folders.

**Step 6.** Within each of these 14 folders (if appropriate) sub-theme envelopes were added depending upon the amount of relevant and related material. The basis for judgements and conclusions is presented for each question in the results and discussion section of this chapter. However the following give examples of the kinds of categories employed: **Folder 4:** 1a "What does "hypothesis-testing" mean to you?", three sub-theme envelopes were developed, "examples of sound definitions"; "examples of weak definitions" and "any other evidence". **Folder 5:** 1b "How is the teaching of a hypothesis testing framework approached on your course?", six sub-theme envelopes were developed, questioning techniques/cause and effect; theory through lectures; interactional/ecological; scientific method via write-ups; reflective practitioner/scientists; link between theory and practice, reflection on process and so on. **Folder 6:** 2a "What does the following finding mean to you", two sub-theme envelopes were developed, "surprised" and "positive". **Folder 7:** 2b "How is this teaching approached on your course", seven categories were developed, underpins modules; linked with consultation; role-plays etc; micro-teaching; placement tasks; encourage EPITs; don't cover.

**Step 7.** Where appropriate frequency statistics (i.e. percentages) were also computed for certain folders and sub-theme envelopes.

**Step 8.** **Steps 5 and 6** were repeated over and over again until all relevant interviewee responses were sorted into folders and sub-envelopes. Though a very time consuming process it proved invaluable when it came time to write up the results as a logical order
Step 9. In writing up the results of this exploration it was important to return to the context that the selected individual utterances had came from, hence the need for a full copy of each interview transcript to be available.

7.2.4.2. Credibility of analysis – trustworthiness

According to Lincoln and Guba (1985) it is the responsibility of all researchers involved in analysing interview transcripts to establish that his or her study is "trustworthy". Some of the techniques for achieving trustworthiness used in this present study are outlined below. These techniques included triangulation, reflective note-book, and debriefing with an external colleague. Such approaches assist both the reliability and validity of the procedures used to analyse and interpret the data collected.

**Triangulation.** This method was employed to help make logical links and connections within and between interview phases, between different interviews and with reference back to the results of previous studies and the literature.

**Reflective note-book.** As this was a new research methodology for the researcher a reflective note book was kept during the course of the data collection and analysis phases. The purpose of such a strategy was to assist the researchers self-awareness and monitor data collection and analysis. This was important in that the researchers approach to the interviewees was crucial in terms of obtaining "rich" responses. In the note book the researcher maintained a section detailing general reactions to the course tutors as well as to their responses. Observations of each course tutors affect, perceived truthfulness (especially important given the concerns highlighted in study one), body language and consistency of responses were noted. Cues that were used to ascertain whether course tutors appeared to be influenced by social desirability effects included body language (e.g., not maintaining eye contact) and inconsistencies through the interview. These categories were used to keep track of any suspect data. Two tutors appeared slightly defensive at times. When this theme was explored with them they felt that they may be
"being disloyal" to their courses as they wanted to present them in a "good light". Overall it was concluded that despite a degree of defensiveness all interviews had consistency and were seen as being adequate for analysis.

Debriefing with an external colleague. During the data analysis phase, the researcher met with an external colleague who had considerable experience in undertaking analyses of semi-structured interview data. During these sessions the focus was upon reviewing the logic of the analysis process, discussing folder and sub-theme topics, considering emerging trends and/or themes. The stance of the colleague was supportive, but critical, as confirming or contradictory evidence was actively sought, interpretations were questioned and the basis of conclusions was reviewed.

7.3. RESULTS AND DISCUSSION
In study one it was assumed that when course tutors responded to the postal questionnaire they would do so carefully, accurately and honestly. However, as has already been highlighted in previous sections there were real doubts raised about the validity of the conclusions reached. The current study aimed to investigate via face-to-face interviews course tutor's reactions, views and insights to some of the main findings of this thesis. The results and discussion section uses the 14 questions from the interview proforma to structure the reporting and discussion of results.

7.3.1. REFLECTIONS ON STUDY ONE
7.3.1.1. "What does "hypothesis-testing" mean to you?"
For the purposes of this thesis and this study hypothesis-testing was defined as consisting of six inter-linked elements:

1. The formulation of a hypothesis involves a testable proposition based upon the theory (knowledge) base in psychology (or related disciplines) about the relationship between two or more aspects or concepts of a given situation.
2. The hypothesis is then expressed in operational terms indicating exactly how it is to be investigated.

3. Mention is made to testing out the efficacy of a given hypothesis via assessment (The importance of evaluating, synthesising and integrating data derived from assessment is stressed).

4. Mention is made to a detailed examination of the outcomes of any assessment in terms of how the results confirm or disconfirm the initial formulation of the hypothesis (i.e. falsifiability, refutability and testability).

5. Mention is made to the tentative nature of hypotheses and the need to modify them in light of assessment evidence and the need to revise and generate new hypotheses.

6. Mention is made of attempts to verify and revise hypotheses by going back and repeating the whole cycle again (Popper, 1989; Robson, 1993).

In summary, the hypothesis which is constructed is neither true or false but is seen as being more or less useful – it helps to organise the overwhelming mass of data collected and as a useful basis for intervention. In light of the information derived from assessment the hypothesis can then be modified or changed and new hypotheses formulated (Sigston, Curran, Labram & Wolfendale, 1996).

Only two out of the six course tutors interviewed (33%) were able to provide a adequate definitions of what "hypothesis-testing" meant to them. For this study an adequate definition was defined as those consisting of four or more of the above six key aspects which were stated clearly and coherently. This was still the case even after explicit prompt questions had been asked. The following excerpt gives a flavour of the types of definitions which were seen as being adequate:
"Right. I think it means on the basis of whatever information is presented, the psychologist constructs an initial hypothesis, and then generates data-gathering methods which could illuminate, elicit data, which would either strengthen those hypotheses or lead to their revision or abandonment. So that they can systematically – not discount – but strengthen the probability of evidence, of certain hypotheses" (Interview 6, lines 53-57).

The following excerpt is an example of the types of definitions which were seen as being inadequate:

"Hypothesis testing means having sort of read the literature, using professional experience in coming up with specific questions that you want to investigate" (Interview 1, lines 28-29).

The key features in four out of the six responses (67%) to this question was a general lack of specificity and clarity as to what was actually meant by "hypothesis-testing". Of the group of four tutors whose responses were viewed as being inadequate all appeared to be confused by the question. One tutor stated that "it was challenging", and another saying that they had not "given it much thought". Within this group of tutors after several prompt questions their attempts at defining hypothesis-testing included loose reference to the following:

1. Involves some form of data collection - "you have collected some data, some information" Interview 2, lines 30-31.

2. Involves some form of question about cause – "you have a number of views about what could possibly be the etiology" Interview 2, lines 31-32).

3. Involves the need to keep an open mind – "it would mean working with them in a way that encourages them to keep as open mind as possible about the situation they're involved with - with a particular child" Interview 3, lines 57-58).
4. Involves some sense of being interactional – "just trying to point out all the time how complex a situation is that a child's involved in and move away from within-child model" (Interview 3, lines 74-76).

It could well be that this question was too complex to have asked near the start of the interview before both the interviewer and interviewee had relaxed into their respective roles. As will be highlighted in a later section almost all of the tutors reported that they would have found it helpful to have had a summary of the results and the interview questions before the actually interview so they "could get my head around them" (Interview 1, lines 406-407). Given this caution the conclusion that the majority of tutors found it difficult to define hypothesis-testing clearly and coherently may be overly harsh.

Taken at face value then the majority of tutor responses can be seen to be stated in what Argyris' terms (1993a & b) "applicable knowledge", and says very little about what the specific "actionable knowledge" skills are, how they are taught and how they are evaluated. Applicable knowledge is "knowledge that is shown to be relevant to contexts beyond the research context in which it is produced". Applicable knowledge "fits" with the external environment: hence it has external validity. "Actionable knowledge" specifies how "applicable knowledge" can be implemented in everyday life. It specifies the actual behaviour or actions that must be produced if the relevance or fit is to be actualised" (Argyris, 1993b, p.29).

Tutor comments offer limited guidance as to exactly what hypothesis-testing is at an actionable knowledge level. Even after a series of probe questions there was no mention made about where hypotheses came from (i.e. knowledge base in psychology or related discipline) or what theoretical framework hypothesis testing was embedded in (i.e. problem solving or consultation process models). One tutor did refer to more theoretical considerations by saying that hypothesis-testing was placed "within the hypothetic or deductive model of Karl Popper" (Interview 4, lines 54-55).

Study one observed that the majority of training course tutors said that they taught their EPITs hypothesis-testing frameworks. Certainly at an espoused level this finding is probably accurate as all tutors interviewed in study three reported that they
Table 7.1 Ways course tutors report that they teach hypothesis-testing to EPITs (N=6)

- We teach circular questioning techniques, looking at circular causality, looking at interrelationships and cause and effect relationships within lectures (2 – 33%)

- We cover the theory through a series of lectures looking at traditional problem solving models and hypothesis generation this happens at the beginning of the year (6 – 100%)

- We stress an interactional ecological approach (5 – 83%)

- Applying basic scientific methodology via case write-ups and project work (5 – 83%)

- Encouraging EPITs to be reflective-practitioners or practitioner-scientists (3 – 50%)

- We try and link the theoretical work with practical work so that when they have done a piece of casework, they actually have to reflect on the process and think about what sort of hypothesis they're generating and how they have tested then out (3 – 50%)

Note: Numbers in brackets refer to the number and percentage of course tutors' who made the exact or similar comment.
taught such an approach. On the basis of this finding it was assumed in study one that the course tutors surveyed clearly understood what hypothesis-testing was. The current findings cautions against such an optimistic conclusion suggesting that although all course tutors shared certain common ideas about what hypothesis-testing meant the vast majority (66%) were unable to provide clear and specific definitions.

The real problem may be evident at the "theory-in-use" or actual practice level where confusions about what hypothesis-testing actually means may result in an equal lack of clarity in exactly how to develop such skills in EPITs (i.e. how can you develop skills in others that you yourself are not totally clear about?). This leads naturally to exploring the results of the next question which asked course tutors how they taught hypothesis-testing skills.

7.3.1.2. "How is the teaching of a hypothesis testing framework approached on your course?"

Table 7.1 summaries the approaches that course tutors reported that they used to teach hypothesis-testing frameworks to their EPITs. All course tutors were to a greater or lesser extent able to outline in general terms how they (or their course) went about teaching hypothesis-testing. All tutors mentioned that they covered the theory at the start of the course using lectures to explore problem solving models and hypothesis generation.

In most cases this was embedded within the positivistic paradigm as 83% stated that they taught EPITs to use scientific methodology to guide their work. An equal number (i.e. 83%) stressed that such work was undertaken within an interactional or ecological framework. To all tutors this meant challenging solely within-child conceptualisations of problem situations and seeing causation as involving the interaction of a whole range of factors. This interactional stance was evident in the outcomes of training EPITs at UCL in study 2 (b). Only 50% made reference to placement tasks and reflection as strategies to guide EPIT learning. No mention was made of using pre-lecture readings though every tutor said that they provided EPITs with reading lists.

All course tutors were able to a greater or lesser extent outline how they (or their course) went about teaching hypothesis-testing to their EPITs. Most of the course tutors
Table 7.2 Ways course tutors report that they teach sharing thinking to EPITs (N=6)

- Underpins most modules units i.e. checking out thinking with children, sharing information with parents (2 – 33%)
- Module on consultation approaches (1- 17%)
- Role-plays and simulations (2 – 33%)
- Micro-teaching (1 – 17%)
- Practical placement tasks to interview teachers, children and parents (5 – 83%)
- Encouraging EPITs to share their thought processes (2 – 33%)
- Don't directly teach it, we don't have a session on how to talk to teachers (2 – 33%)

Note: Numbers in brackets refer to the number and percentage of course tutors' who made the exact or similar comment.
(4 – 67%) were able to outline in general terms how the task of teaching EPITs such a framework was done. In one case a tutor gave up and suggested that they send the researcher a copy of their courses handouts. This finding provides some support for the prediction made above that given that the majority of course tutors were unable to clearly define what hypothesis-testing was that they would also be vague at an actionable knowledge level about exactly how this was done.

The evidence collected indicates that most of what course tutors said was at an applicable knowledge level saying in broad terms what needed to be covered but offering very little in terms of exactly what skills and how these skills were to be taught (i.e. making clear links between course objectives in this area and a set of skill competencies). Such information may well be covered in appropriate detail within courses’ handbooks, lecture notes and handouts. Again it may well have been unfair of the researcher to have expected course tutors to have retained the detail in their heads.

The point here though is that the majority of tutors were unable to recall specifics and discussions remained at a general level talking about philosophical approaches (i.e. "We really stress reflection", "It's ecological and it's also interactionist", "I mean, I'd say that we hope that it's all synthesised", "It is a reflection on what they've learnt. So it might be, how do they feel about those idea, were they sort of robust") but little clarity was given about what these terms meant and how they were put into practice. These findings are interesting in that a focus on interactionist approaches is consistent with the findings of study two (b) which will be discussed more fully in a later section.

7.3.1.3. "What does the following finding mean to you?"

"The results highlighted that 85% (11/13) of course tutors said that they taught their EPITs to "share their thinking out loud" with clients during initial interviews".

Course tutors responses to this question were coded in one of two ways, those who were surprised and cautious about the finding (17% - 1 tutor) and those who were positive and/or had expected such a finding (83% - 5 tutors). A flavour of the first type of response is given below:
"I suppose I'm surprised actually because my experience of practice and work with EPITs is that there is some degree of sharing in terms of making explicit what you're thinking but not always and there is a certain amount of editing that goes on in any conversation and even more so when you're working with a teacher or with a parent. So I think you would actually – there are certain things you would share with them but I don't think you're making everything totally explicit your thinking processes just because that would be hard and contaminate the conversation" (Interview 2, lines 78-84)

In the extract above the tutor expresses a degree of caution about the concept of "sharing one's thinking aloud" during an initial teacher interview. It is as if they want the interviewer to remain in control of the process (Model I strategy), especially with teachers and parents fearing that being too open about there views may contaminate the interview process. In talking further with this tutor they stated that even though they could see what I was talking about, they none-the-less viewed sharing one's thinking as "a risky strategy".

Flavours of the second type of response are given below:

"I suppose for me it's saying, you know, psychologists are effective where they work with others to come to a shared understanding so sharing thinking in a certain way, not imposing your views, but hypothesising and questioning and sharing thoughts, is a way of coming to a shared understanding which is I think a crucial area of effective working" (Interview 1, lines 112-116), and

"I think that (the result) was highly probable. Because I think most of the courses now are promoting or using personal construct psychology with a notion of the psychologist as the research assistant, so you would there be annotating your theorising with lots of checking out" (Interview 6, lines 153-156)

The next question focused on how course tutors went about teaching EPITs the skills of "sharing their thinking aloud" during an initial interview.
7.3.1.4. "How is this teaching approached on your course?"

Table 7.2 summaries the approaches that course tutors reported they used to teach "sharing thinking out loud" to their EPITs. Five out of the six tutors (83%) mentioned that they relied upon placement tasks to give EPITs experience "sharing their thinking" when interviewing children, parents and teachers. Two tutors (33%) reported that the principle of "sharing one's thinking" underpinned most of their modules - as a value or as a belief. How explicit this was made to EPITs and whether it was stated in actionable knowledge terms was unclear. Role-plays and simulation tasks were reported to be used by two courses (33%) with a further one mentioning that they did some micro-teaching but "not as much micro-teaching as we feel we should. Just because of resourcing, numbers and time" (Interview 6, lines 186-187). Two tutors (33%) stressed that at every opportunity they encouraged EPITs to "share their thought processes". Only one tutor was able to provide a coherent theoretical framework for why sharing thinking or thought processes was a good idea. This tutor referred to the work of Robinson and Arygris. Most talked in terms of it encouraging partnership or did not address the question at all. It was assumed in study one that "sharing one's thinking out loud" captured the meaning of the researcher's term accessible reasoning. Most tutors reported that they taught "sharing one's thinking" and it was therefore assumed that courses taught accessible reasoning. As the responses to the next question illustrate this was far too much of a conceptual leap.

7.3.2. REFLECTIONS ON STUDY TWO

7.3.2.1. "What are your first reactions to the finding about the role accessible reasoning may play in the development of problem understanding?"

All course tutors required that the introduction to this question be repeated. This was probably because it was overly long and the information shared about study two and accessible reasoning was very detailed (e.g., "It's a very dense question" Interview 5, line 123). This being said all tutors commented very positively on the design of the study and the findings greatly intrigued and interested them (e.g., "Yes. That absolutely fascinates me" (Interview 6, line 193; "I think it's very exciting" (Interview 4, line 25)). Further responses are shared below:
"What a wonderful thing to do as an integral part of every course. At the beginning of the course, and end, to show them the skills that they've picked up. They probably wouldn't be aware that there was that level of change" (Interview 6, lines 234-236).

"I suppose I'm not surprised. I think that people who are effective communicators, that an aspect of them being able to communicate effectively is to do with, I suppose, and it comes from counselling, that ability to empathise – that ability to put yourself in the other person's position and to formulate the problem from their perspective" (Interview 2, lines 161-165).

"I think it's exciting because it has all the potential in terms of improving the quality of the interviews which are conducted by educational psychologists" (Interview 4, lines 295-297).

All tutors commented that the researcher's definition of "sharing one's thinking out loud" – or accessible reasoning was "more involved and complex" than they had thought. This is further evidence that one of the optimistic conclusions reached in study one; that the majority of training courses in England, Wales and Northern Ireland taught accessible reasoning was unfounded. Perhaps at a very general level the majority of tutors may hold to the value and logic of sharing one's thinking during an initial problem solving interview with a teacher, but there is no evidence that this is specifically taught on most courses in the detail assumed by the researcher.

All course tutors interviewed reported positive reactions to the finding regarding the role that accessible reasoning may play in problem understanding process. In addition 4 out of the 6 tutors (67%) interpreted the results of study two as suggesting to them that their courses would also have produced a similar result. When this issue was explored further the assumption made by these tutors was that training courses were all "pretty similar". This may well be the case but is a question which this thesis was unable to address and would require further exploration. A flavour of such a view is presented below:

"It's heartening that the people who've had some training did actually start to use it – I
think what happens, in my limited experience so far, is the shift in thinking is tremendous in this 11 months of training. So, I think what it probably suggests is that certainly people who are eligible and get selected to come on Ed Psych training course are able to make that shift which I think is important" (Interview 5, lines 108-112).

Though a more cautious view was expressed in the following excerpt:

"I would imagine other courses haven't actually focused on that as a technique in terms of trying to develop the way of interviewing" (Interview 4, lines 281-282).

In summary, this section concludes that accessible reasoning, as defined within this thesis was not in fact being taught in the majority of courses represented in these interviews. The next question asked tutors to reflect upon the reasons why accessible may be important in developing problem understanding.

7.3.2.2. "If this finding is valid, how do you think it can be explained? i.e. have you any idea about why accessible reasoning might be important for the development of high quality problem understanding?"

Four out of the six course tutors (67%) found answering this question very difficult. Even when asked probe questions most appeared confused. Their responses were again characterised by a lack of coherence and clarity. The following example was typical of such responses:

"There's a whole - thing about the importance of - there could be just the importance for the psychologist of actually articulating something because of what you have to do to get it from the thoughts to out there and then once it's there and you're actually mixing that with what the teacher says, you always get more from two people" (Interview 3, lines 403-406).

Of the two tutors who were able to respond there were two main elements common to their answers. First, was the idea that accessible reasoning would be effective by providing a means of improving reliability:
"I would think, massively improved reliability. In that it radically reduces risk of the interviewer selectively keying into particular utterances, selectively interpreting. Clearly, if you've got the power imbalance, you've got to risk that the teacher accepts interpretations as the (things) that the buy. But at least it gives them the opportunity to disconfirm and all the rest of it" (Interview 6, lines 266-270).

"Um, again, that it's in some senses, it's collaborative working again that you're saying you're testing out and sharing and there's an opportunity for feedback about that, um, it's not the psychologist making their own interpretation in isolation" (Interview 1, lines 194-196).

Secondly, there was the notion of accessible reasoning providing a means of engaging the interviewee as a collaborator or problem solving partner:

"And probably, helping them explore things that they've been taking for granted. So it's sort of sounding board as well" (Interview 6, lines 276-277).

The next question asked course tutors to reflect upon the possible implications for training if the results on accessible reasoning were found to be confirmed in subsequent research.

7.3.2.3. "What are some of the possible implications of this finding for training courses for educational psychologists?"

All course tutors were able to provide a range of implications that the finding on accessible reasoning might have to their training of EPITs. The suggestions offered by tutors were fairly similar and involved the need to: 1. Re-look at how interviewing was taught on training courses, in particular what frameworks and models were being used and how robust these were given research (this thesis and other). 2. To revamp and place much greater emphasis upon micro-teaching and role-plays or simulations. One tutor mentioned the need for sustained practice not just one or two sessions. Another tutor mentioned Bruner's (1977) spiral curriculum idea as helping to structure such sessions. 3. The need for far greater rigour and accountability in terms of competency based
practice meaning that EPITs have actually demonstrated skilfulness to an agreed level, rather than just relying upon written accounts. A flavour of such responses is given below:

"I think it means that we must work harder at monitoring – watching the way in which EPITs operates. I think it has implications for how one could use role-play situations without involving clients to help EPITs develop those very techniques" (Interview 4, lines 327-329).

One tutor rather bravely highlighted the need for staff involved in training EPITs to also have their skills developed. They talked in terms of the need to support tutors and having an accredited continuing professional development programme in some form. Certainly at an espoused level all tutors believed that the rigour involved in role-play and simulations tasks was preferable to what they were largely doing at the moment. All tutors appeared to rely upon placement experiences to provide EPITs with the necessary practice and "reflection-in-action". Five tutors (83%) mentioned the difficulties in monitoring what was actually happening on such placements and indicated that placement files did not necessarily do a good job of evaluating competency in specific skill areas – such as interviewing. Four tutors (67%) also raised the issue of the quality of role models EPITs were being exposed too. One tutor cynically said that "placement supervisors probably have, have a much greater impact on EPITs style and ah on their practice than we do" Interview 2, lines 331-332.

7.3.3. REFLECTIONS ON STUDY TWO (A)

"The next group of questions is focused upon some of the main findings from research which explored whether interviewer personality characteristics (i.e. neuroticism, extroversion, openness, agreeableness, conscientiousness) and features of their communication style (i.e. effective, dominant and non-verbal) contributed anything to our knowledge of the processes involved in formulating a "high quality" understanding. The results suggested that these aspects were not associated with the quality of interviewers' problem understanding, or their use of different interview strategies".
7.3.3.1. What are your reactions to this finding?

Most course tutors (i.e. 5 – 83%) were surprised and a little critical that the researcher had explored these facets. When these perceptions were explored further via probe questions two tutors, whose reactions were typical of the others stated that:

"I've never found that personality inventories have actually given me very much. I've never found them useful so I don't know what it would tell me about – there are several logic loops to jump through" (Interview 3, lines 476-478), and

"Cynical, in that the use of paper and pencil measures of extroversion, etc., etc., are dubious to say the least and if you've used them with a small sample, the likelihood of coming out with a significant correlation between variable is pretty small if any. They're interesting when you use very, very large samples but the small sample of individual casework, I think they're pretty useless. That's my personal view them, so I'm not surprised that you haven't gotten any significant findings (Interview 4, lines 377-382).

One tutor, though still cautious about personality measures picked up on the issue of not having a baseline set of scores and suggested that other measures may have been more illuminating:

"I suppose I'm not very strong on personality. I suppose it's worth checking in a way, because it's also interesting that you're saying that the 10 EPITs who were tooled up, had performed better at interviews (to get on to the programme). So it's also quite interesting to see whether you have a failure of particular personality types at interviews. It's quite handy to get that evidence, if you don't seem to. I'd have been a bit more interested in looking at some of the still fairly crude measures of emotional intelligence or (Gardener's) inter and intra personality...you need your baseline" (Interview 6, lines 350-357).

Such reactions provide further support for understanding why the majority of tutors surveyed in study one did not fill in the questions pertaining to personality and communication factors and why they were so dismissive and critical. In the literature review (chapter two) it was reported that educational psychology in England, Wales and
Northern Ireland has been greatly influenced by cognitive-behavioural models in understanding and working with human behaviour. Personality psychology has not and still does not have much credibility or sway amongst those who train educational psychologists.

The next question looked at the secondary finding that at the end of the training year EPITs perceived themselves as being significantly more neurotic than the control group. The weakness with this finding was that there were no before training measures of neuroticism made.

7.3.3.2. "What does this finding mean to you?"

All but one course tutor agreed with the researcher's own hypothesis that such a finding may well be interpreted as EPITs reactions to stress given the demands of the one-year training course:

"That they've had a very, very stressful year" (Interview 1, line 327).

Some tutors also commented on the tendency for one-year courses to be too demanding and the need for tutors to be more realistic in the expectations they made of EPITs:

"I don't know what your programme is like, but my experience with most programmes for one year is awful. I think we should be really honest. It's not a three-year programme so we should make a decent one-year programme but we try and cram things in and we lose touch of what it feels like to be an EPIT who has a family or who's got a life who has an essay due on Christmas day. I've lost touch sometimes" (Interview 3, lines 517-522).

One tutor was more cautious than the rest and wanted to see the actual measure used before they were prepared to be too definitive:

Before I could answer the question I'd need to know the test itself and the kind of question which were asked and which questions were meant to measure the neuroticism,
7.3.4. REFLECTIONS ON STUDY TWO (B)

The next group of questions was focused upon some of the main findings from study two (b) which investigated whether training had an impact upon the number and type of hypotheses EPITs used to attribute causal relationships to aspects of the teacher's problem situation. Results showed that there were no significant changes in the number of hypotheses offered by either EPITs or controls. However, when the hypotheses were categorised, for example into those focused on the individual child, those focused on the learning environment and those focused on interactions between the two, it was found that by the end of training EPITs were significantly more likely than controls to use interactional hypotheses to attribute cause when integrating aspects of the teacher's problem situation.

7.3.4.1. "What are your first reactions to these findings?"

All course tutors responded very positively to the results of study 2 (b). Most interpreting the findings to be affirming of their own practice with EPITs. In addition they felt that such findings supported their view of how an effective educational psychologist would operate (i.e. moving a way from solely within-child conceptualisation of complex problem situations to more "interactional" or "systemic" models):

"That's great. It's exactly the direction one would want the EPITs to go into" (Interview 4, line 431), and

"My thoughts are that they're very interesting findings and I think it is interesting that you have actually managed to show that it has really had an effect on their thinking and so it would make me think about how we would look at that on our course" (Interview 1, lines 375-377), and

"I think the fact that they are qualitatively different, is I'm interpreting you to say, and they're looking more at context and those sorts of issues and environmental factors, I find refreshing to be honest. I feel that if we are doing that as a profession, if we are
getting that, then I think that's the right way to be going from that whole notion of within-child factors and we're looking at the aspects that we can effectively change which are to do with the learning environment and those sorts of issues and interaction" (Interview 2, lines 305-312).

7.4. LIMITATIONS OF STUDY THREE
Before this chapter is concluded the next section will outline some of the limitations related to study three and thus place any of the conclusions within a more cautious context.

7.4.1. Issues to consider
Limitations of using a semi-structured interview format
The main limitation associated with semi-structured interview formats is that they do not allow the interviewer to pursue lines of inquiry or to follow-up unanticipated topics that are unique to the individual interviewee. However, within study three as the probe and follow-up questions were not prescribed there was some flexibility for the interviewer to ask different and spontaneous questions of relevance to each interviewee. In general terms if more standardised responses are sought then semi-structured interview formats will reduce the extent to which individual differences and circumstances can be taken into account.

Within the constraints imposed by the aims of study three such an approach was seen as being acceptable as it provided a contrast to the standardised closed question format used in study one. In that study course tutors had to fit their knowledge, experiences and feelings into predetermined categories. There was evidence that tutors found some of these categories confusing and in some situations irrelevant. The main emphasis in study three was to provide a framework which was more able to encourage course tutors to express their own views, understandings and reactions rather than those predetermined by the researcher. However, it is acknowledged that course tutor reactions were constrained by the use of a standard set of 14 questions.
Representativeness of sample
The sample represented 46% of the original sample of 13 course tutors who had returned completed questionnaires in study one. Whether the sample of tutors who were actually interviewed was truly representative of the other 54% is debatable. Every effort was made to make sure that the sample covered the range of views expressed in the questionnaire survey study. Study three was in many ways different to others reported within this thesis where understanding was perhaps of more relevance than representativeness. The study provided a fascinating insight into the pit falls of relying solely upon survey data. The study also provided a means for the researcher to check out assumptions and attributions made about training on the basis of study one. But more fundamentally the study provided a way of gauging the reactions of fellow colleagues to some of the more interesting and potentially challenging findings of this thesis.

In terms of following up some of the initiatives expressed by tutor colleagues the researcher is currently thinking about organising a one-day curriculum planning colloquium on the teaching of interviewing and problem solving skills. This is particularly relevant with the possible move to extended training in England and Wales.

Need for briefing note
On hindsight it was evident given the complex nature of the subject matter that some course tutors would have found a written summary of the main findings of the thesis, including definitions and the questions helpful in preparing themselves for the interview. Some tutors mentioned that they came to the interview "fairly cold" and that it took them "some time to get their head around the questions". It also suggests that findings based upon initial responses should be treated with caution – but then balanced with responses to probe questions. This feedback was helpful and will certainly inform future interviewing research which might be undertaken.

Social desirability effect
One of the main constraints identified around the validity of the results obtained in study one was the possible influence of social desirability effects. In study three face-to-face interviews were conducted and though confidentiality was assured none-the-less it was
a situation where course tutors views and reactions were put under the spot light. Tutors may well have responded in ways they thought were socially acceptable and pleasing (or not) to the researcher. This view is challenged given the great degree of consistency found in the responses that tutors gave. Only two tutors reported feeling uncomfortable and challenged by some of the questions with the majority reporting very positive reactions to taking part in the study.

7.5. CONCLUSIONS

Study three set out to gauge the reactions to some of the main findings of this thesis of a group of course tutors who had initially taken part in study one. This study comes full circle and provides a conceptual integration of some of the main ideas explored within this thesis. As such it provides a useful way of reflecting upon the impact that this thesis could have to the teaching of problem understanding skills within initial interviews.

The main emphasis of this thesis was on examining the relationship between selected interviewer behaviours and the task of gaining a high quality understanding of a teacher's problem situation by interviewing them. This task involves finding out what the teacher's perceptions of the problem situation are, jointly evaluating it, and where necessary challenging the efficacy of it, so that an effective intervention can be planned and implemented. To achieve such an understanding it was proposed that the interviewer needs to develop his or her own understanding of the teacher's problem using an hypothesis-testing framework and accessible reasoning strategies.

The results of study one indicated that 100% of the training courses surveyed reported that they taught hypothesis-based interview/problem-solving frameworks. To support such approaches, the majority also reported that they taught "sharing one's thinking out loud" as an important interviewer strategy. These results were initially taken at face value by the researcher. Unfortunately, the explorations outlined in study three cast real doubt upon the meaning to be given to such findings.

At a conceptual level it was observed that the majority of course tutors had difficulty clearly articulating their understanding of (or operationalising) hypothesis-testing. This may well have not been that problematic if they were then able to clearly
describe how they taught it. Though more of the tutors were able to outline a range of approaches the over whelming impression was that there was a general lack of clarity, coherence and specificity in the approaches used to teach such a framework.

In addition, study three highlighted that in actual fact the course tutors interviewed did not have a clear understanding of what accessible reasoning really was. When accessible reasoning was defined all of the tutors reported that it was more complex and involved than they had ever thought. In study one it had been erroneously concluded that "sharing one's thinking out loud" was understood by tutors to mean the same thing - this was clearly not so. The majority of course tutors expressed great enthusiasm regarding the finding about the role of accessible reasoning and indicated an interest in including some of the ideas and approaches within their courses.

In Arygris and Schôn's (1974, 1996) terms the majority of tutors were able to frame their responses to what needed to be taught and how at a general applicable knowledge level but had difficulty in explaining at an actionable knowledge level *how* they went about developing such skills. The impression gained was that most tutors relied upon placement experiences and EPITs' subsequent write ups to make judgements about skill competence.

In terms of training educational psychologists, psychological knowledge can be taught through lectures, texts and workshops. Unfortunately, learning about the scientific method, reflection and interactionism, even if supported with illustrated case examples, is very different from being able to use such processes when faced with an ill-structured problem situation. By suggesting that a particular example illustrates a specific type of problem, the tutor, and not the EPIT, has transformed the ill-structured task into a well-organised problem. The challenge for tutors is to teach EPITs how to undertake these transformations in vivo.

Robinson and Halliday's (1988) study was published well over twelve years ago, but in the interim very little research has resulted, either extending or attempting to replicate the findings on the relationship of accessible reasoning to problem understanding. As discussed in chapter one, many training programmes for counsellors and interviewers place a great deal of emphasis upon collecting accurate information, and on how to communicate such an understanding to the client. However, within such
programmes little attention is given to exactly how an interviewer (or counsellor) derives this understanding (Robinson & Halliday, 1987). Study three would seem to suggest that the majority of training courses for educational psychologists in England, Wales and Northern Ireland are still pretty much at this stage of development.

The literature on learning and skill acquisition provides a challenge to training courses in that it would indicate that such learning would involve intensive and sustained tutoring in solving a range of real problems which require EPITs to discriminate which knowledge is relevant and how to progressively test its appropriateness to a given case (Halpern, 1998). It is more than just "reflecting-in-practice" and requires feedback on the match and mismatch of intentions and actions. Course tutors indicated placement experiences should provide such a rigorous apprenticeship but most doubted whether this was actually the case.

This thesis has argued that one of the aims of training educational psychologists is to develop their interviewing and problem reasoning skills to competency level. This can be achieved through the provision of regular focused practice and feedback within a meaningful context (i.e. structured micro-teaching sessions using realistic content and settings). Such a rigorous approach would assist EPITs to integrate skills and knowledge to a level that an increasingly competitive and demanding society demands – and would be expected in any extended training programme (Eraut, 1994, 1998).
CHAPTER EIGHT

CONCLUSIONS

8.1. CONTRIBUTIONS OF THIS THESIS

The major contributions to both theory and practice of the studies described within this thesis will be outlined, along with a discussion of their main limitations. It is important to note that it is not intended in this concluding chapter to reiterate points made in the previous chapters but intends to discuss a selection of the key themes raised. Despite the constraints to the unqualified acceptance of the findings of this thesis, it will be argued that the research studies have collectively furthered understanding of the following main research question: "What strategies do EPITs use to help them formulate high quality understandings of ill-defined real-life problems?", and specifically "What interviewer behaviours are related to achieving a high quality understanding of a teacher's ill-defined problem?".

Collectively the results of the studies reported within this thesis have implications for theoretical conceptualisations of interpersonal problem solving. In addition there are contributions to more applied questions regarding what skills (both at applicable and actionable levels) need to be taught and practised as part of preparation to become an educational psychologist (or a related practitioner) and how these skills need to be taught. This is of great relevance if understanding a client's problem situation is the stated aim of involvement with them via interviewing, consultation or counselling roles.

8.1.1. Contributions to theory

8.1.1.1. The role of reasoning in solving complex and ill-defined problems

This thesis has replicated and extended the earlier research of Robinson and Halliday (1988). They concluded from their study that interviewer use of accessible reasoning was significantly related to the production of higher quality formulations of a client's ill-structured real-life problem. The amount of information or the number of topic areas covered, when viewed in isolation, were not as important as the way the interviewer
processed, and reasoned with, the information given to them.

As discussed in chapter two, Robinson and Halliday's conceptualisation of the importance of reasoning, and the cognitive strategy of accessible reasoning, was based upon earlier theoretical work by Argyris and Schönn (1974, 1996), and their concept of explicit reasoning. Explicit reasoning was theorised, within their model of interpersonal effectiveness (Model I and Model II), as being a necessary strategy to facilitate effective interpersonal problem solving. The problem solvers behaviour is ideally directed towards the goals of producing valid information, encouraging free and informed choice, and in developing internal commitment to choices and their implementation and monitoring. These goals are achieved by the problem solver designing interpersonal encounters which encourage both participants to experience a high degree of personal causation - that is, the communication process and content are managed jointly, as is the protection of self, including emotional and controversial issues.

Conceptually accessible reasoning is identical to explicit reasoning with Robinson and Halliday's unique contribution being to have operationalised the concept and to have systematically researched its effects. One of the unique contributions of this thesis is that at the time of writing it appears to represent the only systematic attempt to validate Robinson and Halliday's findings and extend them in a training study. Given the potentially important ramifications for the training of interviewing and problem-solving skills in both educational psychologists (and related groups such as clinical psychologists and counsellors), this is surprising.

Within Argyris and Schönn's theory, Robinson and Halliday's research and the studies undertaken in this thesis, accessible (explicit) reasoning was viewed as the interviewer (problem solver) making accessible their thinking and reasoning about information which the client has disclosed. This is done by providing specific concrete examples, and the reasoning which followed from these, which led to particular attributions or evaluations being made. In this way the interviewer (and client) is in a better position to be able to check out the accuracy and validity of these propositions with the client.

The results of this thesis (study two) replicated and extended Robinson and Halliday's earlier findings and demonstrated a significant relationship between
interviewer use of accessible reasoning and the subsequent quality of their understanding of a teacher's problem situation. As a consequence, the combined set of research findings provides support for Argyris and Schöen's theory regarding the role of explicit reasoning in solving complex problems. This finding was obtained using a relatively small sample size and therefore suggests a robust effect. Replication on a much larger and broader sample (e.g., including counsellors and clinical psychologists and taking into account some of the methodological constraints, in particular the equivalence of EPIT and control groups) would provide the validation needed to make more confident generalisations about the unique role that accessible reasoning plays in assisting interviewers in gaining a high quality understanding of a client's problem situation.

8.1.1.2. Validation of instrument to measure quality of problem understanding

The majority of problems with which educational psychologists (and other related practitioners) are presented can be characterised as lacking immediate and obvious solutions, holding the potential for an array of possible ways of reaching any solution and by a lack of clarity as to what information is actually relevant. Despite these constraints it has been argued in this thesis that an interviewer's "high quality" understanding could be complete, well-argued and true to the facts of the case (Glaser, 1984; Greeno, 1998; Robinson & Halliday, 1988).

Perhaps one of the difficulties which has put researchers off exploring problem reasoning is the problem of conceptualising and measuring such understandings. As part of their research Robinson and Halliday devised a rating-measure, largely based upon the conceptualisations and guidelines provided by Argyris and Schöen (1974, 1996) and by Glaser (1984). Robinson and Halliday's rating-measure consisted of nine subscales and the use of the total score. Raters used a 5-point Likert-type rating scale to make judgements about the quality of written analyses of a client's problem. The authors concluded that their measure provided a reliable and valid means of making judgements about the relative quality of interviewer analyses.

This thesis modified this measure by using an 8-point Likert-type rating scale. This was done to provide greater differentiation of ratings. The results which were obtained from study two confirmed that the measure was a valid and easily used (once
raters have been trained) research instrument for making reliable judgements about the relative quality of interviewers' written problem analyses. These results argue strongly for the measure's future use in similar or related research.

8.1.2. Contributions to practice

8.1.2.1. Perspectives of training course tutors

Study one set out to survey training course tutors in England, Wales and Northern Ireland on aspects of interviewing and problem solving. This study represented one of only a small number of published accounts which have attempted to do this. This state of affairs is surprising given the central place interviewing and problem solving are said to play in the practice of educational psychology. There is a distinct lack of primary information on training courses' views on what interviewing and problem-solving skills should be taught, how they should be taught, and how effective particular approaches are.

The results of study one indicated that interviewing and problem solving were both seen as being core skills to effective educational psychology practice. Most courses reported that they were doing a "more than an adequate" job in preparing their EPITs to undertake initial teacher interviews and problem solving. There was a great degree of consistency between course tutors in the interview and problem-solving frameworks and strategies being presented to their EPITs (i.e. all reported using an hypothesis-testing framework). Finally, accessible reasoning (or its semantic equivalent) was also reported as being taught by the majority of courses.

Unfortunately there were very real concerns about the reliability and validity of the results obtained – mainly attributed to social desirability effects and the assumption that course tutors fully understood the researcher's terminology and concepts. On hindsight the sole use of a questionnaire survey was ill-advised and a combination of structured questionnaire and face-to-face interviews would have been preferable. This has been noted for subsequent research endeavours.

Study three attempted to redress these concerns about the validity of the information by interviewing a sample of course tutors (46%) who had been surveyed as part of study one. A semi-structured face-to-face interview schedule was used to gauge tutors reactions to some of the main findings of this thesis. The results confirmed the
concerns identified in study one and challenged some of the optimistic conclusions reached. The findings indicated that many tutors were unable to give a clear definition of what a hypothesis-testing framework is and were also vague about how to teach such skills. The researcher had on hindsight naively assumed that "sharing one's thinking out loud" was semantically equivalent to accessible reasoning and would be understood as such by tutors. When tutors were presented with the researcher's definition all reported that it was more complex and involved than they had understood.

The majority of tutors couched their responses in applicable knowledge terms (e.g., general level) and had difficulty specifying at an actionable knowledge level exactly what skills were important and how these would be most effectively taught. The results of study three challenges the current way interviewing and problem understanding are conceptualised and taught to many EPITs in England, Wales and Northern Ireland.

8.1.2.2. Place of practice, feedback, supervision, critical dialogue and problem reasoning within EPIT training

If future research, employing a much larger and more representative sample, could confirm that accessible reasoning makes a unique contribution to the understanding process, then there would be specific and far reaching implications for the training curriculum and how such interviewing and problem-solving skills are taught. Within the constraints of one-year training, courses spend surprisingly little dedicated time to teaching interviewing and problem-solving skills in the manner outlined by Eraut (1994, 1998). Great faith appears to be placed by course tutors on the value of placement experiences in enabling EPITs to practise interviewing and problem-solving skills. There are a number of assumptions which appear to being made here, first that practice in Eraut's sense is occurring (i.e. which is regular, rigorous and skills-based) and second that such practice is being supervised and feedback, in Argyris' sense (i.e. providing feedback on the match and mismatch of espoused theory and theory-in-use) is being provided by both university and field-based supervisors.

Anecdotal evidence would seem to challenge both of these assumptions. It would appear from course placement handbooks that most EPITs are only formally observed by a university-based tutor about twice on each placement and that, in the researcher's
experience (working with EPITs over the past six or so years), most EPITs are only formally observed on average about once by their field supervisors during their placements. It is proposed that very few placement situations would satisfy Eraut's and Argyris' requirements for the development of competent practice. If future research confirms the validity of these assumptions then there would need to be a major re-think about how university-based courses ensure that EPITs reach the level of competence and rigour which is increasingly being demanded by a competitive and accountable working environment.

This thesis suggests that for EPITs to become competent and effective problem solvers they need to have built upon and developed a complex set of **content-guides** (i.e. the store of knowledge in psychology and related disciplines and experience which is used to generate and test hypotheses). Second they need **frameworks** (e.g., like problem analysis and critical dialogue – see chapter two) which are used to guide and give purpose to their actions. Third they need **regular practice and feedback** on the match or mismatch between what they say they do and what they actually did. Finally they need **time to develop such skills**.

Study two would suggest that competency skills-based training (i.e. similar to that used at UCL) is associated with improved problem-reasoning performance, while study two (b) suggests that training also has an important impact on the type of hypotheses which EPITs use to attribute cause and integrate aspects of the client's problem situation (i.e. a move from solely "within-child" and "home" factors to consideration of more interactional-based causal explanations).

Lunt and Pomerantz (1993) argue for the right of educational psychologists to have regular opportunities for supported reflection on their practice. At an applicable knowledge level most course tutors would probably subscribe to the idea that regular group and individual supervision is helpful for both EPITs and practising educational psychologists. Again anecdotal evidence would suggest that regular rigorous supervision does not often happen and when it does occur it may be characterised by unstructured and ill-focused monologues which have little or no impact on altering the supervisee's behaviour. It is not surprising then that the supervisor ends up either positively reframing difficulties or giving off-the-cuff advice at an applicable knowledge level. Although the
supervisee may "feel better", his or her actual practice may have been left unchallenged and thus any opportunity for actionable learning has been lost (Argyris, 1993; Monsen et al, 1998).

The problem-analysis framework may provide a useful way of structuring such supervision sessions. Clearly to be effective and purposeful supervision requires a skilful interchange between supervisor and supervisee. Accessible reasoning (within a modified version of Robinson's (1993) critical dialogue framework) could also provide a means for both the supervisor and supervisee to say what they think, give the reasoning behind what they think, check out their thinking with the other and do so in a way that increases the chances that the other will listen and not become defensive (Cameron & Monsen, 1998).

In its simplest form, critical dialogue outlines three key principles which can be used to inform and enhance the interpersonal dialogue between supervisor and supervisee - increasing valid information for both parties, promoting freedom of informed choice and enhancing commitment and responsibility (i.e. Model II guiding principles). By employing these principles, the supervisor and supervisee aim to be open about their views (including their reasons for holding these views and/or ignoring their fallibility), to publicly test out the adequacy and shared understanding of these views and to manage bi-laterally the process and content of this interaction (including the management of emotionally difficult issues).

Robinson (1993) has suggested that critical dialogue should be focused (as far as is possible on concrete events and evidence (e.g., "when you declared that there was absolutely no provision for extra reading support, did you mean that support provided by parent helpers was also inappropriate or ineffective?"). Such a reality-based approach reduces discussion at the more commonly observed philosophical or abstract level where the chances of resolving difficulties are reduced and the likelihood of unhelpful emotional argument and heated debate increases (Neenan & Dryden, 2000).

Critical dialogue and the accessible reasoning skills embedded in it aim to enhance interpersonal communication by making thinking and reasoning as explicit and accessible as possible. Such openness about ones views is undertaken when this is seen as an appropriate means of achieving an accurate understanding of a situation and when
a genuine desire to resolve an issue is sought. The rationale behind this approach is that both the supervisor and supervisee require full and accurate information upon which to base their resolution of practice issues. The positive consequences for both parties are that joint problem-solving effectiveness increases as a result of greater availability of data, higher quality information, better management of emotionally sensitive issues and a commitment to a personally meaningful form of development which impacts directly on the tough and intransigent problems of educational psychology practice. As has been stressed before such a dialogue needs to occur within an interpersonal stance which increases the probability that the other will listen carefully rather than becoming angry or defensive. Indeed, this is the crucial skill which is required to use critical dialogue.

8.1.2.3. Conclusions

EPITs (and related practitioners) would need therefore to be trained in how to reason effectively with information gained from a wide range of clients, presenting with a wide range of problems from a wide range of problem situations. It could be imagined that such training would not only need to directly teach integrated content-guides or maps (i.e. domain-specific information and knowledge), but also how such information is applied to these varied problem situations. Given the emphasis within the training documentation on educational psychologists working at a more consultative level with more complex individual, family and systems issues, training would need to prepare EPITs with relevant content-guides and processes to cover current and future demands. A one-year training course is far too short to equip EPITs with such complex content-guides and is yet another argument for extending training.

The results of this thesis provided support for Argyris and Schön's theoretical view regarding the importance of explicit reasoning and Robinson and Halliday's research conceptualisation of accessible reasoning (and by association Robinson's work on critical dialogue). By sharing their reasoning about the information given to them by the client, interviewers are able to obtain feedback on their tentative hypotheses. There is a clear process by which information can be confirmed or contested. From a practical perspective adopting such an approach is likely to enhance the interviewer-client relationship, in the sense that involving the client would increase the chances of them
sharing more relevant information (including embarrassing or sensitive material) thus increasing the likelihood of effective problem solving. Clients are more likely to perceive the interviewer as actively attending and listening to them as they try to understand their problem. It is plausible that as a result of this interaction clients may also have gained a better understanding of their own problem. It was also argued that accessible reasoning (critical dialogue) principles could provide a useful framework to guide EPIT supervision sessions.

Finally, in situations where the teacher is the main source of information, the use of accessible reasoning enables educational psychologists to sample teacher data in a way that increases their chances of formulating "an accurate and complete" understanding of a problem situation which is situated within a context (Glaser, 1984; Greeno, 1998).

8.2. LIMITATIONS OF THIS THESIS
Leedy (1980) stresses that one of the "axioms of research is that any research effort should be replicable; that is, it should be able to be repeated by any other researcher at any other time under precisely the same conditions" (p.74). One of the fundamental purposes of each of the studies reported within this thesis was to impose as much control as possible over the conditions that would otherwise have obscured effects. To a greater or lesser extent all of the research studies reported within this thesis were undertaken within a quantitative research framework. This thesis has presented evidence of defensible research practice within the boundaries and constraints of this positivist research paradigm. More will be said about the rational for choosing such a research paradigm and its associated constraints in a later section of this chapter.

Defensible quantitative research practice is seen in the thesis' attempt to:

1. Make explicit the rational for undertaking the investigations in the first place, including the research questions posed and as a result of these the research methods then chosen.
2. Make explicit its contribution to the body of knowledge on how people go about solving complex and ill-structured real-life problems.

3. Replicate and extend previous research in this area, by validating and developing previous findings and measurement instruments.

4. Contribute to theory validation, in its description and definition of variables, in the operationalisation of dependent variables, and in the various attempts to randomise any spurious effects between groups by the provision of validated measures, the use of standard procedures, and the application of rigorous statistical procedures (i.e. non-parametric statistics including the Bonferroni correction statistic).

5. To rigorously critique each investigation within its paradigm, yet also stepping outside the chosen quantitative paradigm to make explicit its assumptions and limitations.

8.2.1. Issues to consider

Although this thesis has developed, within a largely quantitative framework, an empirical base for understanding the problem-reasoning process during initial teacher interviews, there are several key limitations which need to be highlighted. Such a critique is offered so that this thesis and its findings can be viewed within a specific research context. By doing this it will be evident what the strengths and limitations are of both the general research methodologies used, but equally of the research paradigm itself. Each of the studies reported within this thesis included a separate and detailed critique which highlighted the limitations specific to each study. For the purposes of this section, six key constraints will be discussed before a detailed critique of the chosen research paradigm is presented.

Sample size and statistical significance

The most obvious, and arguably the most significant constraint in studies one, two, two
(a) and two (b) was the relatively small sample sizes used. Small numbers reduce the power and generalisability of the statistical tests used. It could well be that some of the near significant results observed may well become significant with a larger sample. Because of the very complex and time intensive nature of the research procedures used, and in terms of the resources available to the researcher the samples chosen were seen as being adequate for thesis purposes (Tuckman, 1978; Cohen & Manion, 1980). Future researchers would need to carefully weigh up the desirability of a larger sample against the constraints imposed by the complex and time consuming procedures employed (e.g., preparing and teaching problem analysis and accessible reasoning, preparing a valid model problem analysis, training the actors, transcribing interview tapes and analysing transcripts and written problem analyses and so on).

**Representativeness of sample**

An important question was whether the results obtained from the sample of 10 EPITs were generalisable to other courses and EPITs. As outlined in study one, there are 14 university-based training programmes within England, Wales and Northern Ireland, which taught about 224 EPITs during the study period. Based upon these factors the group of EPITs used in studies two, two (a) and two (b) represented 7% of training courses and 7% of EPITs being trained. Given that interview criteria and procedures vary from course to course, and without any comparative information of courses' selection data available, it is unclear whether a candidate selected by one course would also have been selected by another. It could well be that the EPIT sample was not, in fact, representative of the types of people selected onto other courses; equally it may well have been. This thesis assumed that the sample was in fact representative of the larger population of EPITs, and as a result the data were generalisable.

**Selection bias**

In study one every training course in England, Wales and Northern Ireland was contacted with only one out of the 14 courses not returning a questionnaire. In most cases one tutor from each course, who had responsibility for interviewing and problem solving filled in the questionnaire, the assumption being that this tutor fairly represented the views of their...
course and its members, or at least a consensus view. With a relatively small sample this is an important assumption in terms of the validity and weight that is given to the responses. Study three indicated a more productive and defensible approach would have been to have included a combination of a questionnaire survey given out to course tutors (highlighting general issues) and then to have followed-up with face-to-face interviews exploring with tutors themes and meanings in much greater depth. Equally other approaches such as focus group sessions with both tutors (and EPITs) would also provide a rich source of data. These have been noted for future research undertakings.

*Were the EPIT and control groups comparable?*

In studies two and two (a) and two (b) the sample was selected from a total of 44 people who were interviewed for 16 training places. Following interviews all candidates were rank ordered (from 1 to 44). The first eight place holders were given funded places, and the remaining eight places were unfunded. Of this group of 16, 10 EPITs were randomly selected to take part in the study, eight were funded (80%) and two were unfunded (20%). This represented a sample of 63% of the course group. The control group, on the other hand, was selected from the remaining set of people who had been offered unfunded places. The control group represented 53% of this group of 15.

Clearly the EPIT group consisted almost totally of people who had been rank ordered within the top eight places. The assumption here is that this group was perceived as being clearly more able on a range of measures than the other candidates (including measures of interpersonal effectiveness – oral presentation skills, clarity of responses, logical arguments). These skills are related to propositional reasoning skills which underpins problem analysis and accessible reasoning. The control group on the other hand was made up of people covering a much wider range of rank ordered positions.

Given the complexity of the subject matter it could be argued that this difference between the two groups could well have been a key factor contributing to later differences, in that the readiness of the EPIT group was superior to that of the control group. However, it should be reiterated that on all other measures of interest made at time 1 the two groups were in fact equivalent. This said there are questions about the usefulness of the control group and this is acknowledged as a source of weakness when
it comes to interpreting the results. The results do show however that training makes a
difference as the EPIT groups problem analyses were all rated as being inadequate at the
start of training and showed significant improvements by the end. The question is would
the control group have responded as well to such an experience. Anecdotal evidence
indicates that a number of the controls (four – 50%) secured and took up places on
training courses in the year immediately following this study. Finally the two groups
also differed in terms of the standard of their first degree. The EPIT group consisted of
significantly more people with a 2.i level of honours. What might these differences have
meant for this thesis? Cognitive and interpersonal skills could well have acted as
powerful mediating variables.

Hawthorne effect
The Hawthorne effect describes the degree to which people's behaviour is influenced by
the mere fact of participating in a research study. For example, the course tutors in study
one had to complete a questionnaire about their views and the teaching approaches used
on their course, and the participants in study two had to undertake an initial and then
complete several complex questionnaires. These experiences could have affected how
tutors responded in, the type and level of disclosure offered. In fact there was good
evidence that social desirability effects and a lack of clarity with the questionnaire itself
had been influential in study one. For the participants involved in study two such
experiences could have influenced how they approached the tasks at time 1, and altered
how they behaved at time 2. All of the control group intended to reapply for educational
psychology training, and may have seen involvement in the study as enhancing their
chances of gaining a funded place. The post-interview questionnaires may well have led
participants to respond in ways that they thought the researcher wanted, or to state
opinions and give rationales which they thought socially acceptable and pleasing (or not)
to the researcher.

Rater and coder bias
All course tutor questionnaires, participant outcome measures (e.g., transcript of initial
interviews, and written problem analyses (including section three), personality and
communication style questionnaires) were rated and/or coded by the researcher. Within
the constraints of the resources available to the researcher, attempts were made to reduce
any obvious source of bias. For example, in study two all interviews were transcribed
by a research assistant, and typed in a standard format, each transcript had a front sheet
with the participant's code and phase number, for the purposes of rating and coding the
front sheet was stapled together, thus making the transcripts anonymous. In study two
33% of transcripts and problem analyses were second rated/coded by a colleague who
was not familiar with the study's design or purpose. Again in study two (b) about 33% of
problem analysis section three's were second rated/coded by another colleague.
Following training the independent inter-rater/coder reliability scores were all well above
70%. These results gave some confidence that any researcher bias was in actual fact
minimal.

However, in studies two and study two (b) it was the ratings/codings of the
researcher which were ultimately used in all statistical analyses. More subtle biasing
effects were not attended to. For example, the researcher was present, and recorded all
the interviews, and read and rated/coded all of the transcripts. It is possible, though
unlikely, that they could have recalled elements from the interviews, which could have
identified participants (i.e. EPIT or control), and thus led to possible subtle biasing
effects (either inflating or deflating scores).

With hindsight many of these potential biasing effects could have been more
rigorously addressed by either getting all the transcripts rated/coded by an independent
colleague (second checked again by another colleague), or by getting the second
rater/coder to compete all the transcripts, in addition to the researcher. In all cases the
median scores of the raters would have been used for all subsequent analyses. However,
given the resources available for this thesis, and the attempts to attend to the most
obvious sources of rater/coder bias, though a concern it is not seen as a significant factor
in limiting the efficacy of this thesis is questioned.
8.2.2. A CRITIQUE OF THE QUANTITATIVE FRAMEWORK USED TO GUIDE THE RESEARCH STUDIES REPORTED WITHIN THIS THESIS

"1. Suppose external realism is true. Then there exists a real world, independently of us and our interests.

2. If there exists a real world, then there is a way that the world really is. There is an objective way that things are in the world.

3. If there is a way things really are, then we ought to be able to say how they are.

4. If we can say how things are, then what we say is objectively true or false depending on the extent to which we succeed or fail in saying how they are" (Searle, 2000, p.15).

8.2.2.1. Research questions as a source of constraint

Within the social sciences there are currently two main forms of inquiry – qualitative and quantitative approaches. For any research study the researcher starts off their particular investigation or exploration with a clear set of questions which they want answers to. One of the main purposes of this thesis was to replicate and extend earlier empirical research conducted by Robinson and Halliday (1988). Their work was completed within a quantitative research paradigm (Morgan, 1998; Robson, 1993). Robinson and Halliday identified "accessible reasoning" as being a robust variable which significantly correlated with higher quality interviewer understanding. The selection of accessible reasoning was based both upon prior theory (Argyris & Schön, 1974, 1996) and detailed observation and reflection upon how EPITs (and other practitioners) went about the process of trying to understand a client's problem following an initial interview.

The research reported within this thesis was also completed within the same research framework (though the use of non-parametric statistics was seen as an improvement). This was done so that earlier findings could be replicated, validated and
extended. This should not imply that alternative qualitative methodologies were seen as being unimportant or inadequate. However, given the stated purposes of this thesis and the subsequent research questions posed, quantitative designs were chosen as providing the most appropriate methodologies to address these issues. The research studies reported within this thesis and interpretations of their findings have therefore been positioned very much within the boundaries of this approach, while at the same time making such a fundamental research decision and its rationale explicit to the reader.

8.2.2.2. The choice of methods used within this thesis

Qualitative research is used when the researcher wants to understand in detail why an individual does or thinks something. It is often used in the commercial world to elicit a respondent's "purchase logic". Purchase logic explains why an individual buys a particular product or service. The results of such research form the basis of identifying "real market segments" (i.e. groups of people who purchase for the same reason).

Qualitative research is a particularly useful tool for determining what is important to people and why it is important. Qualitative research provides a rigorous process from which key research issues/themes are identified and questions formulated to guide inquiry. The main focus is upon understanding and deriving meaning from respondents.

In study one, on hindsight the researcher actually wanted to understand course tutors' views on aspects of interviewing and problem solving. Unfortunately, a postal questionnaire using largely quantitative structures was the sole means of collecting this information. Clearly given the discussion so far a more defensible position would have been to use both a structured questionnaire to identify data on the how many aspects and face-to-face semi-structured or unstructured qualitative interviews to address the why aspects.

Study three (though descriptive in design) was an attempt to rectify this situation and it proved very useful in cautioning against some of the more optimistic conclusions derived from study one. The remaining studies within this thesis also used quantitative designs as these were seen as being appropriate ways of replicating and extending previous research by Robinson and Halliday (1988).
8.2.2.3. "The great debate"

Of all the social science disciplines psychology has tended to adopt a much more positivist stance than the others with regard to the research methodologies it chooses (Stevenson & Cooper, 1997). The reasons for this are complex and reflect particular political (i.e. funding for university-based departments is higher if courses are seen as science rather than as arts subjects) and philosophical agendas about what constitutes "real science" and "real knowledge". Qualitative and quantitative research traditions are generally seen as being based upon irreconcilable ways of going about the process of inquiry. This dichotomy is probably not a particularly helpful position as it implies two absolute distinctions.

This section attempts in a small way to contribute to this debate by reflecting upon two main problems: firstly the lack of coherent definitions, and secondly the skewed focus in the literature upon methods rather than a critique of the basic assumptions which underlie the two approaches. The following discussion begins by defining key terms, it then identifies the main characteristics of the two methods of inquiry, and then assesses whether or not there actually is a fundamental difference between them. The question of essential difference is approached in terms of the ontological and epistemological assumptions and attributions made by researchers.

8.2.2.4. Defining key terms

Definitions of "qualitative" and "quantitative" are linked closely to method. The Collins English Dictionary defines "quantitative" as: "Involving or relating to considerations of amount or size; capable of being measured; compare qualitative" (p.1226). This definition indicates the possibility of data gathering, whether by measuring or estimating. The definition of "qualitative" refers to "quantitative" as being its opposite and implies a link to data gathering: "Involving or relating to distinctions based on quality or qualities" (p.1226).

The social science literature appears to follow the approach adopted by Collins and defines qualitative as being in opposition to quantitative. Glazier's (1992) views are typical of much of this literature where he defines qualitative a being dichotomous to quantitative and then lists qualitative methods as being ethnographic, naturalistic and
unobtrusive. Glazier (ibid) almost apologetically states that "The one characteristic that all of these terms share is that they tend to obscure rather than clarify the concept. The concept seems to be confusing not only because of the number of terms, but also because it carries different connotations for different people" (p.6).

Bradley (1993) adds further methodologies to the qualitative stable with "grounded theory" and "hermeneutic approaches to the interpretation of text" (p.433). Chatman (1984) defines qualitative research by what it is not: "unlike other methods, field work does not use tightly controlled variables or the creation of structured situation" (p.436). Finally Strauss and Corbin (1990) also define it by what it is not: "...any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification" (p.17).

These definitions reflect those in the Collins English Dictionary by defining "qualitative" vaguely and against what it is not - namely quantitative. More positive definitions of qualitative research include it being: holistic, environmental, or contextual; inductive or dialectical; and pluralistic or relative (Bradley, 1993; Silverman, 1993; Strauss & Corbin, 1998; Sutton, 1993). These defining features differ from the more negative definitions in that they are more ontological (or what is the nature of reality that can be known) or epistemological (how we know) than methodological.

8.2.2.5. Ontological and epistemological issues
Several writers argue that the real issue concerning the great debate about qualitative and quantitative approaches is one of epistemology (Westbrook, 1994). Within this view qualitative approaches are seen as being a different kind of research "paradigm" rather than a method. Wildemuth (1993) suggests that the difference is between positivist and constructivist paradigms is that the former recognises an objective reality not dependent upon the researcher and the latter views reality as being subjective and socially constructed (Searle, 2000; Silverman, 1993).

In Wildemuth's (1993) work she is still seen to link epistemic assumptions to method but here the difference is that she sees method being determined by the epistemology, not the other way round: "It is true that the positivist approach, with its goal of discerning the statistical regularities of behaviour, is oriented toward counting the
occurrences and measuring the extent of the behaviours being studied. By contrast, the interpretative approach, with its goal of understanding the social world from the viewpoint of the actors within it, is oriented toward detailed description of the actors' cognitive and symbolic actions, that is, the meaning associated with observable behaviours" (p.451). The point here is that methodology and epistemology are codeterminate. In this sense the researchers rationale for choosing particular forms of inquiry arise from their particular stances on ontology and epistemology.

Morgan and Smircich (1980) suggest that this ontological and epistemological difference is fundamental to understanding the issues within "the great debate". Morgan and Smircich (ibid) devised a continuum from subjective at one end to objective at the other. The subjective end encompasses the ontological view of reality as being constructed by the human mind as the result of socially negotiated narratives. From this perspective there is no way of ever understanding or knowing "reality" because all human experience is mediated through a socially constructed framework. Some anthropologists deny that there is even a universally valid rationality, but that different cultures have different rationalities (Searle, 2000).

At the other end of the continuum reality is seen as being concrete and tangible. Searle (2000) clearly outlines the five fundamental assumptions underpinning the objectivist view:

"1. There is a real world that exists independently of us, independently of our experiences, our thoughts, our language.

2. We have direct perceptual access to that world through our senses, especially touch and vision.

3. Words in our language, words like rabbit or tree, typically have reasonably clear meanings. Because of their meanings, they can be used to refer to and talk about real objects in the world.

4. Our statements are typically true or false depending on whether they correspond
to how things are, that is, to the facts in the world.

5. Causation is a real relation among objects and events in the world, a relation whereby one phenomenon, the cause, causes another, the effect." (p.10).

As a result of these two views of reality epistemology either involves obtaining information for the purpose of understanding individual (or group) social constructions or the collection of knowledge for the purpose of constructing a positivist science. These outward signs of these two sets of fundamental assumptions about the world of experience can be seen as the difference between the thinking subject and the studied object.

8.2.2.5. Thinking subject and the studied object

The objective or realist framework as practised within this thesis involved the researcher (thinking subject) as being separated from the participants (the objects of the research). The researcher focused upon the participants in an effort to understand objective reality. A subjective researcher on the other hand would have placed the researcher-subject into the context of the situation to understand it. The separation of the subject and the object is lessened with the object becoming an active participant in the process of understanding. The subjective researcher aims to know the specific situation mediated through the participants own unique interpretations and constructions. The relationship then between subject and object is an indicator of the ontological and epistemological assumptions upon which a given study is based.

8.2.2.6. Objectivity, methodology and theory

A researchers position on bias, particularly that introduced by the researcher themselves is affected by the underlying epistemological assumptions they make. Objective researchers try to eliminate or at least reduce bias while subjective researchers recognise and acknowledge it. Objective researchers acknowledge the limitations of their attempts to reduce contaminating factors and this discussion is made explicit in their subsequent write-ups. The point is that subjective researchers shift the focus from eliminating
researcher bias to developing the relationship or partnership between them and the respondent. The difference then is between the separation or integration of researcher-subject. Lincoln and Guba (1985) none-the-less emphasise that the qualitative researcher tries to achieve credibility, transferability, dependability, and confirmability the trustworthiness of qualitative practice as described in study three.

Three methodological issues will be outlined which are influenced by how the relationship between subject and object is construed by the researcher. Though the three issues are presented separately they reflect differing degrees of emphasis rather than substantial difference. Firstly, the focus of subjective research is on developing a relationship with the respondent by gaining entry, establishing rapport, showing empathy and reciprocity (Cohen & Manion, 1980; Strauss & Corbin, 1998). The data obtained can be analysed in either quantitative or qualitative terms. Content analysis of field notes or transcribed interviews is a way of quantifying text and was seen in study two (b) and study three. Secondly, there is the issue of context. The objective researcher attempts to control the context while the subjective researcher leaves it to the respondent. Thirdly, there is the issue of using multiple methods to measure the same quality. However, Lincoln and Guba (1985) argue that the utilisation of differing epistemological frameworks and divergent paradigms renders a combination of the two incompatible. This appears to be where the debate has arrived at present with most researchers adopting an uncritical mix method approach.

Finally, the role and importance of theory develops from the way the subject-object relationship is conceptualised. In subjective research, theory may be generated by reflecting upon the evidence obtained during a study. Objective researchers devise hypotheses or research questions prior to a study. This fundamental difference makes sense if objective research is designed to understand a single objective reality. This ontological assumption would imply that all research on a given topic (such as accessible reasoning) if well structured should contribute to one "truth". As such research which has gone before (i.e. Robinson & Halliday, 1988) is taken as informing the theoretical basis of current studies and their hypotheses. Subjective research, however, acknowledges that different and conflicting theories may be equally valid according to the particular researchers' and respondents "interpretations of their narrative stories". As
such theory though not uninformed by previous work develops from the findings of the particular study within its particular context. The audience (reader of report) giving it meaning and relevance to the degree that it conforms to their unique life story or experience.

8.2.2.7. Summary

One of the lessons learnt from undertaking this thesis was the importance of researchers making their epistemological and ontological positions more transparent. Is it that simple though, is it just a matter of deciding whether to be ontologically and epistemologically objective or subjective? Searle (2000) outlines that there is no way of proving that there is one knowable reality or that there are multiple realities of which we can only be privy to a limited range via individual knowledge. Dervin (1977) attempts to quickly move us away from the obvious conclusion that the choice of "qualitative" or "quantitative" methods "boils down to a question of preference, political correctness or even faith".

Dervin (ibid) introduces the concepts of "information 1" and "information 2" to capture the sense that both ontologies are of equal value and can coexist. As mentioned before this appears to be the current devault position for a lot of researchers. Dervin (ibid) makes the distinction between objective knowledge (information 1) which is defined as information which describes reality, the innate structure or pattern of reality, data; and subjective knowledge (information 2) which is defined as idea, the structures or pictures imputed to reality by people. Within this framework information 1 refers to external reality and information 2 refers to internal reality.

Yet Dervin's approach still views "information 1" as representing the "real" reality and "information 2" as an incomplete and imperfect construction made by individuals. The researcher is still seen within the thinking-subject-seeking-information 1 mode. Bradley (1993) is often quoted as saying that there are multiple realities, yet in a discussion of data gathering within qualitative research she implies that actually there is only one reality: "In qualitative research, as in other research traditions, data are collected from the empirical world. Those data then form the basis for conclusions about the empirical world. Any data set is, in fact, a subset of possible data about any phenomenon, and many of the key issues in data collection across all research traditions
address the problems inherent in using a subset as a stand-in for a larger data universe" (p.439).

8.2.2.8. Conclusions

Rather than adopting a dichotomy to represent the differences between qualitative and quantitative research traditions a continuum is probably more useful (i.e. with quantitative – information 1 at one end and qualitative – information 2 at the other). If research is viewed in this way then any process of inquiry (in Deweyian terms) will involve the researcher in making explicit certain assumptions concerning "epistemology (how we know) and ontology (what can be known)" (Stevenson & Cooper, 1997, p.159). Bradley (1993) adds that "it is possible, and highly desirable in the interests of methodological pluralism, to explore assumptions that underlie all research in the context of their usefulness in understanding particular research problems. Active discussion of what we know, in light of how we produced that knowledge, can only extend our understanding..." (p.448). Here expression is given to the real issue, that inquiry is about applying the human skills of logical reasoning to understanding the complex world we experience through our senses and which is mediated through our intellect.

The difference between qualitative and quantitative approaches then becomes one that is primarily technical rather than philosophical, in the sense that it will be the researcher’s (or clients, or commissioners) purposes for undertaking the research or the research questions which will largely dictate the methods used (or the combination of methods used). Some questions are best illuminated by qualitative methods and others better dealt with via quantitative methods. As a result there will be qualitative data and quantitative data generated which will need to be dealt with in different ways depending upon the purposes of the research inquiry (Dewey, 1933).

In the process of theory building, the natural sciences (such as chemistry) generate research findings and then apply them to other conditions. Within the social sciences developing and refining theory is achieved through the process of applying understandings to the actual situations under study (i.e. action research studies). To gain understanding to generate knowledge and solutions to complex real-life situations involves not only being clear about what you want to investigate (achieve) but also
having an appreciation of the limits of the frameworks being used. There is a growing
realisation within the social sciences that researchers will utilise both qualitative and
quantitative methods for different purposes perhaps within a single research project
(Robson, 1993).

Robinson (1987, 1993) started her inquiry into how people reason by employing
naturalistic observations of school counsellors interviewing real-life client's. On the basis
of structured reflection and with reference to theoretical models she identified certain
factors which were investigated using more quantitative methods. Within this thesis such
observational work has been done for accessible reasoning, however other factors (as yet
unknown or speculative, i.e. the role of content-knowledge in reaching a high quality
understanding) may be relevant and important. A systematic case study approach could
be helpful in identifying other factors worth exploring (i.e. intensively following a small
group of EPITs over the course of the training year using both structured and
unstructured interviews, reflecting upon tasks using debriefing techniques, analysing
learning diaries and so on).

One of the aims of this thesis was to try to generate both applicable and
actionable knowledge. Applicable knowledge is shown to be relevant to contexts beyond
the research setting (i.e. the external validity), and actionable knowledge specifies how
applicable knowledge is implemented in everyday life. Such knowledge specifies the
actual behaviour or actions that must be produced if the desired outcome is to be
achieved (Argyris, 1993, 1999). At an applicable knowledge level this thesis has shown
that interviewer use of accessible reasoning is associated with higher quality
understandings being reached, following an initial teacher interview. At an actionable
knowledge level this thesis has specified how (i.e. what strategies) an interviewer goes
about using accessible reasoning (and by implication validates the teaching methods used
to teach such strategies).

However, the previous sections caution against an unbridled acceptance of these
claims. The results of this thesis need to be interpreted with reference to both the
strengths and limitations of the specific methods used, and the research paradigm
employed. Within a positivist framework this thesis demonstrated correlational
relationships between a number of factors. The main finding was that accessible
Reasoning, as an interviewer strategy, is associated with higher quality understanding being derived from a teacher's problem situation. However, correlation does not demonstrate a clear causal relationship between two variables. It could well be that a third factor (i.e. social competence or an as yet unknown variable) or a series of interacting factors could be crucially involved.

This thesis has shown that when people are formally trained they are able to produce accessible reasoning statements during the course of initial teacher interviews. But the use of accessible reasoning was within the context of a simulation task involving an actor who was articulate and sophisticated in terms of the level of understanding they had about their problem situation. This thesis has not shown how effective (or ineffective) accessible reasoning would be with a teacher who did not have such a clear understanding of their problem.

8.3. IMPLICATIONS FOR FURTHER RESEARCH AND PRACTICE

Despite the acknowledged limitations of this thesis, there are none-the-less important implications for both further research and practice. These main implications will now be highlighted in the following sections.

8.3.1. Implications for research

Continued quantitative and qualitative research is warranted to provide improved tests of the main research questions and hypotheses identified within this thesis. A number of potentially interesting areas for development were identified and are discussed below.

8.3.1.1. Teachers' understanding of their own problem situation

An important area which warrants further exploration concerns the key question of "Whether interviewer use of accessible reasoning is associated with an improved understanding by the teacher of their own problem?". As discussed in chapter one the majority of people seek assistance from a counsellor (or psychologist) with personal or work-related difficulties because they want to gain a better understanding of their problems. It is assumed that such insights will contribute to alternative views of the
problem being constructed which, along with other assistance (emotional support, encouragement, practice, feedback), would alter the problem. The assumption here is that a higher quality understanding would also be related to a more effective intervention (solution).

The focus of this thesis was on the specific strategies which assisted an interviewer in analysing a teacher's problem situation more accurately and comprehensively. The interviewer was seen as firstly discovering the teacher's perceptions of their problem situation; secondly, disclosing their own perceptions of the problem; and finally working with the teacher to test the accuracy and relevance of both views. These processes were seen as being key to understanding the problem.

One method of addressing this question would be to devise a scale which measures teachers' perception of their understanding of their problem, administered before and after an initial interview with an educational psychologist. It might be possible to adapt the Robinson and Halliday rating measure, used to rate the quality of interviewer reasoning, to measure dimensions of teacher reasoning and understanding. The data derived from this pre-post design could then be correlated with interviewer use of accessible reasoning to see whether the two were related.

The main challenges with such a design would be on deciding what the teacher's problem was, and in devising a rating measure which produced valid and reliable data. The design would still be constrained by the limitations inherent with correlational studies, namely causation which would still be left unanswered. In addition, other variables could well be significant; however the design would reduce the researcher's control over these independent variables. It is difficult to imagine designing a simulation task which could measure teachers' understanding of their problem. These difficulties would need to be addressed before this crucial question could be adequately researched within a quantitative paradigm, and may suggest that more qualitative methods might be a useful way forward.
8.3.1.2. The relationship between "high quality" understanding and effective solutions

Although not the focus of this thesis, it was assumed that reaching a high quality understanding of a teacher's problem situation was not an end in itself. It was conjectured to be ultimately a means of improving the effectiveness of solutions and interventions. This area also warrants further research.

One method of addressing this question would be to devise measures of solution or intervention effectiveness using a range of indicators, depending upon the nature of the problem and intervention planned (e.g., academic and attainment data, behavioural data, teacher, parent (carer), child perceptions). This data could then be correlated with measures of interviewer problem-analysis quality to see whether the two were related.

Such a methodology would be difficult to achieve because of the increased number of independent variables which could affect the results, and which the researcher would have limited control over, even if they were aware of them (e.g., resource and competency issues). Such fundamental methodological difficulties would need to be attended to before reliable and valid comparisons could be made. This may well be another area where more qualitative methods might be employed.

8.3.1.3. The relationship between experience and the use of accessible reasoning skills

Although not the focus of this thesis, it was assumed that once EPITs were trained in problem analysis and accessible reasoning they would go on to practise and refine these skills making them their own by integrating them into their developing practice. Clearly such views are as yet untested assumptions which, given the research outlined by de Mesquita (1992) in chapter two, would provide interesting directions for further research. De Mesquita observed that experienced practitioners did not employ in any systematic way the models and frameworks they were taught while being trained.

There are a number of potential research questions which emerge for the EPIT sample used in this research, and those trained at UCL, for example, "Do EPITs continue to use, in any systematic manner the problem-analysis framework once they have been working for two years?", and "After two years' work experience, what is the quality of their understanding of teachers problem situations?". In addition there are several related
research questions which could be explored with experienced educational psychologists, for example, "What do experienced educational psychologists do when they undertake an initial teacher interview?", "What interview strategies do they use?", "Do they use accessible reasoning?", and "What would be the quality of their understandings of the teacher's problem situation?".

Finally employing a more qualitative design could provide further insight into the development of problem reasoning skills during the training year, for example using a structured EPIT-completed "learning diary" and regular structured interviews undertaken during the year could provide a detailed developmental story of how EPITs make the transition from classroom teachers and educationalists to applied psychologists.

8.3.2. Implications for practice

The results of the survey of training courses, described in chapter three, indicated that the majority of tutors said that they were teaching their EPITs accessible reasoning type skills. There is a need to undertake more comprehensive research into courses' theories-in-use. Despite the acknowledged limitations of this thesis, there are none-the-less important implications and cautions for those who are or who wish to teach "accessible reasoning" type skills in actionable knowledge terms (Argyris, 1982, 1993).

8.3.2.1. Accessible reasoning as a strategy for control

Gutkin (1999) points out that the teacher-educational psychologist problem-solving meeting is based upon the assumption that such meetings involve collaborative, non-coercive and equal power relationships. Argyris and Schön's work would certainly support this view. Yet Erchul's (1999) analysis of the research literature suggested a rather different view, with such meetings being seen as settings for psychologist directiveness and the exercise of control. This would imply that psychologists impose unilaterally their untested view about teachers' problems. They would employ Model I strategies to achieve short-term goals. Equally following the logic of imposed control, it could well be that interviewers who make their reasoning explicit to a teacher could be seen as threatening and overwhelming to them.

In the early stages of learning accessible reasoning, some EPITs (and indeed
some practising educational psychologists) have reported that the process "feels uncomfortable", is "not culturally appropriate", and is "too difficult, stifles being natural". These observations are understandable within the context of the early stages of learning a complex and rigorous framework. However, within this teaching-learning situation it is important to challenge such views both conceptually and practically. Such "feedback" would need to be presented in a manner that reduced the probability of the recipient becoming defensive, and thus more likely to be unable to listen to the feedback.

It would be inconsistent within the boundaries of Argyris and Schön's theory for an interviewer to "unload" onto the client their untested assumptions and evaluations. The guidance given to EPITs who are learning accessible reasoning for the first time is to reveal their thinking by using client-based information, and case-related and relevant argument. In this way EPITs are less likely to reveal unsubstantiated opinion. This is especially so where the EPIT's views will be perceived as controversial or likely to be contested.

An interviewer's skilfulness is to make his or her thinking accessible in such a way that it reduces the chances of the client becoming defensive. Such skilfulness rests upon what guiding principles or theory-in-use the interviewer is employing (i.e. Model I or Model II). Part of the process of learning accessible reasoning is also learning the complimentary process of obtaining feedback on the match between one's espoused theory of how effective one was, and the effectiveness of the actual behaviour which occurred. The process of receiving and giving "critical feedback" is not easily learnt. The strategy of accessible reasoning may assist this essential process. Another area warranting much more comprehensive research is how to give people critical feedback which is likely to decrease defensiveness and increase their ability to reflect, critique and learn (in Argyris' double-loop meaning of learning, i.e. obtaining feedback so that the person is able to challenge some of their guiding principles, and having the opportunity, if they choose to modify them, so that a new behaviour can occur).

If EPITs were involved with a teacher so that they can achieve their purposes as they define them (i.e. "I must get this teacher to do a curriculum related assessment to meet university demands"), then they are more likely to try and control the interview process. A consequence of this strategy is that the teacher will either resist or tacitly
comply with the EPIT while they are there. As a result there will probably be less valid
information shared, less free and informed choice and limited internal commitment to
solutions and interventions. If, on the other hand, EPITs are taught to actively invite the
teacher (and others) to critique their views, and are seen to modify their understandings
in light of this feedback, if warranted, then the interviewer is less likely to encounter
resistance and mistrust.

Finally when educational psychology educators (and other related colleagues) are able
to identify and manage the methods of effective inquiry that are used to bear on the very
important real-life problems of applied practice, perhaps then they will be in a better
position to work with EPITs intelligently, rigorously, accountably and successfully (as
suggested by Dewey, 1929).

"Reflective thinking is always more or less troublesome because it involves overcoming
the inertia that inclines one to accept suggestions at their face value; it involves
willingness to endure a condition of mental unrest and disturbance. Reflective thinking,
in short, means judgement suspended during further inquiry; and suspense is likely to be
somewhat painful...the most important factor in the training of good mental habits
consists in acquiring the attitude of suspended conclusion, and in mastering the various
methods of searching for new material to corroborate or to refute the first suggestions
that occur (Dewey, 1933, p.13).
REFERENCES


APPENDICES
APPENDIX A

THE PROBLEM-ANALYSIS FRAMEWORK
"Problem analysis is a staged and structured process for investigating problems in the real world. It is a structure within which the consultant can guide his or her work in order to enable problem owners to reconstruct their understanding and resultant attitudes and beliefs about the problematic situation. The problem analysis approach facilitates a collaborative partnership and allows for consultee and consultant to negotiate a series of hypotheses and renegotiate them in light of new evidence. It ensures a focus on specific interventions that have the potential to help and enables systematic evaluation" (Compilation of EPIT comments from the classes of 1994-95 and 1995-96.)

"Problem analysis derives from a traditional, mechanistic, scientific paradigm. It attempts to test hypotheses and then describe reality in objective empirical ways and use logic and rationality to affect change. However, the consultants actually impose their own subjective interpretations on the data. Although this may be based upon logic, rationality and evidence, ultimately only one possible integration of the dimensions is selected. This means that there is always a danger that it is the "wrong" integration, even if it is accepted by the consultee. It is this subjective interpretation which forms the basis for the selection of the appropriate intervention. It may therefore be regarded as particularly important to have clear guidelines for integrating the problem dimensions. Yet the problem analysis framework currently gives no guidance as to how to integrate the problem dimensions" (Written by Lucy Robertson an EPIT on the UCL course in 1995-96. This was written before the inclusion of Morton & Firth's (1995) causal modelling ideas into the framework).

1. The problem-analysis framework
The problem situations referred to educational psychologists, and EPITs during their training year, can at first appear overwhelming, to both the practitioner and the client. It is likely that some EPITs may lose sight of the problem situation as a whole in an attempt to "contain the situation" by focusing too early on what seems to them to be the
most relevant aspects of the request. This is often referred to as the "priority problem" (Sigston et al, 1996). On the other hand, some degree of order needs to be established from the information provided by the client before a clear path of action can be planned by the EPIT.

Within the framework, the role of the EPIT (educational psychologist) is to reduce the complexity of the case and report back to the client in a way that is helpful. One way to manage this complexity is for the EPIT to develop a model which transforms the details of the case into a "problem map". Such a map would outline the problem's key dimensions, and their possible interconnections. As a result the selection of an appropriate intervention is based upon analysis, logic and psychological research.

During work with EPITs at UCL, the researcher's experience mirrored those of Robinson (1987) and Westera and Burlton-Bennett (1995). They had observed within the New Zealand training context that trainee's had difficulty in thinking about problem situations in ways which helped them provide clear, and plausible rationales for the decisions they had made about assessment and intervention. At UCL, EPITs appeared to be confused about how to present their thinking succinctly, and about the decisions they had made in case or systems work. Usually EPIT case reports provided great detail about the actions they had undertaken, the assessments they had carried out, and the results they had obtained. Typically the recommendation section of reports consisted largely of lists of good ideas, suggestions, advice or programme details. The reader of such reports was left to fill in the gaps themselves, and to infer the underlying rationales for the steps and decisions they had taken (Robinson, 1987).

The problem-analysis framework requires that the EPIT's reasoning about a problem situation, the data base upon which his or her hypotheses have been developed, and the rationale for the recommended actions are all made explicit. The EPIT's thinking and actions can therefore be supported or challenged (for example, a review of case evidence by a colleague, supervisor or tutor may either validate an EPIT's practice or reveal a more plausible integrating hypothesis). The problem-analysis framework provides a structure which enables client information to be organised in a logical manner. Of central importance is the generation of hypotheses based upon psychological theory, and research about the nature and causes of the problem situation. Such hypotheses
guide discussions about which areas warrant, and do not warrant exploration. EPITs initially report when learning problem analysis on Local School's placement, at the start of the training year, that if they had more time to assess the situation they would “know what the problem was”. In this sense, they are seeking an objective single statement of the problem situation.

Research referred to earlier from the fields of information processing and working memory indicated that EPITs would become over-loaded with case detail, and thus unable to detect patterns or connections. In practice, the EPIT's decisions in complex cases do not occur through some neutral analysis, but reflect an active process where by a problem is sampled in a systematic manner guided by initial guiding hypotheses. Rather than a search for the one single correct view of a problem situation, an EPIT is seeking a plausible and logical representation of the problem which has a higher probability than others of encapsulating “the facts of the case”, and leading to a clear plan of action.

2. Steps and issues to consider

The following section illustrates how EPIT casework practice at UCL is guided by the problem-analysis framework. Each step is described and, where relevant, examples are given.

Step 1. Clarify the request and check out the need for psychologist's involvement

This step involves clarifying with the client what the issues are, and why they are consulting an educational psychologist. It is important to check whether a referral to (or the involvement of) another agency may be more appropriate given the nature of the initial concerns. The following examples give a flavour of the sorts of requests which EPITs may receive while on placements:

1. A primary school requests an assessment for a "girl with general learning difficulties" who is also experiencing behavioural problems. The school wants 15 hours classroom assistant time paid for by the Local Education Authority.
2. A grammar school requests a comprehensive academic assessment (including an IQ test) without supplying any data or rationale for why this information would be useful in clarifying the pupil's behaviour difficulties.

3. Parents request, via the Special Needs Coordinator (SENCo), an IQ test for their six-year-old child whom they perceive as being gifted, but who cannot yet read her seven-year-old sister's books.

Issues to consider
* Is the request ethical?
* Is it an appropriate request for an educational psychologist or would it be more appropriate for another agency to be involved?
* Is someone requesting a course of action before there has been an opportunity to fully analyse the problem?
* Is sufficient information disclosed with the initial request to allow the above questions to be addressed?

Step 2. Negotiate and contract role
If a psychological perspective is warranted, then the EPIT negotiates a clear brief and purpose with the problem owner. This would include outlining the aspects of the problem upon which they will be initially focusing, explaining rationales, describing what the assessment process will involve (including how effectiveness will be evaluated), and considering how the problem owner will be included and how "reporting back" will be carried out.

The request is negotiated fully with the problem owner who, in most situations, will be the person(s) with a vested interest in solving the problem (e.g., a class teacher or a year tutor). A common error at this stage is for the EPIT to negotiate a brief solely with a person who is strategically distant from the problem situation (e.g., Headteacher, departmental head, or SENCo). After discussions with the problem owner, the request is either accepted in the same (or modified) form, or referred back. This then becomes the joint working brief. Let us look at how the requests outlined above were dealt with.
in practice:

1. *A primary school's request for an assessment of a "general learning delayed pupil..."*

Role negotiated: The EPIT agreed to collect data and analyse the pupil's difficulties. The assessment included an analysis of ecological and systems factors. The information obtained was then fed back to the school. Issues of funding for provision were not seen as being the role of the EPIT in this context, but rather a matter for discussion between the headteacher and the Area Education Office, once the child's needs and the programme required to address them had been specified and agreed. The EPIT's role was to assist the school in clarifying the nature and extent of the problem. The information obtained by the EPIT was used, along with other school-based data, to re-evaluate the appropriateness of the school's current intervention.

2. *A grammar school's requests for a comprehensive academic assessment (including an IQ test)...

Role negotiated: The EPIT's negotiations with the school left the teacher collecting some baseline data. They would later meet to review this and renegotiate a possible role for the EPIT.

3. *Parents request, via the SENCo, for a test of "giftedness"...*

Role negotiated: The EPIT agreed to meet with the parents and assist them in clarifying their concerns and looking at possible next steps.

Issues to consider

* Is there a clear contract between the EPIT and the problem owner?

* Is the problem owner clear about the EPIT's role and the rationale they have given, especially if the EPIT is referring their request back to them? Problems
arise when the problem owner perceives that they are "missing out" on advice or assessment, with the EPIT appearing to be unresponsive to their needs. Such role confusions need to be addressed if the EPIT is going to continue a working relationship with the school.

**Step 3. Guiding hypotheses and information collection**

On the basis of the information so far collected, and drawing widely on a knowledge base of psychological theory, research and practice, the EPIT generates tentative hypotheses which will help guide initial data collection. EPITs often limit their attention to the most relevant aspects of the request or referral, because of time limitations. "But, talk of relevance at this early stage is unhelpful, because this advice presupposes that the psychologist already knows the nature of the problem" (Robinson, 1987, p.35). Most of the problems that EPITs encounter involve uncertainty about what counts as an analysis or solution. At this stage in the process the EPIT behaves very much as a detective, and "throws the net wide" to sample as much of the problem situation as possible. However, the EPIT needs to guard against "being dragged out of the boat" - getting lost in case detail by throwing the net so far as to lose sight of the initial brief and purpose.

The purpose of "casting the net" as widely as possible is to build a rich map of the problem situation, which identifies all of its key dimensions. This process is guided by the tentative guiding hypotheses which have been formulated, and which focus the EPIT's attention on to particular aspects of the situation. Such guiding hypotheses are based upon information derived from the initial interview, and must be grounded in logic and/or sound theory.

The EPIT collects objective information which supports or disconfirms their initial guiding hypotheses. The initial hypotheses developed will obviously guide the sampling of certain areas and will, in turn, highlight other areas needing investigation. Assessment data relevant to the hypotheses being investigated may be collected from a wide range of sources: the EPIT may observe situation(s) where the problem is occurring using both structured and unstructured observational schedules; other rich data sources could lead the EPIT to examine environmental, classroom organisation and management factor (such as seating, grouping, instructions, difficulty level of work, adult-child and

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child-child relationships); consult records and files; collect and examine work samples; seek information from staff through interview, checklists or questionnaires about their involvement in and perceptions of the problem situation; examine school-based assessments and supplement these if necessary with criterion-referenced assessments; support staff in carrying out detailed curriculum-based assessment; administer normative tests of attainment and cognitive processing; communicate with the child concerned, obtaining information through informal, structured or standardised techniques about their attitudes, beliefs, values, learning style and approach to learning; interview parents or carers to gain their perspectives, and so on.

The prime focus of the framework is to assist in clarifying problem situations so that effective interventions can be planned and implemented. "Strengths and positives" are sampled if these would enhance such an understanding of the problem, i.e. support or disconfirm particular hypotheses (For example, Brian, a 15-year-old boy, over-reacts with all his subject teachers. A search for disconfirmation of the hypothesis that his behaviour is specific to school or attributable to teacher reaction provides the rationale for seeking information on whether Brian's behaviour out of school is "positive" as well as the more obvious investigation of the antecedents and consequents of his over-reacting behaviour in school. If Brian's over-reacting behaviour occurs in many settings, a causal integrating hypothesis that relies solely upon teacher reactions would seem an insufficient explanation).

**Issues to consider**

* What are the EPIT's guiding initial hypotheses?
* What are the possible hypotheses and dimensions which are relevant to exploring and identifying intervention needs?
* Are there reasons for focusing on "strengths and positives"?
* Are measures used relevant, reliable, valid and culturally sound? Are there sound reasons for their use?
* Are a range of measures being used and cross-checked (i.e. triangulating)?
* Is the EPIT drawing on the most relevant experience and research which can illuminate the problem-analysis?
Step 4. Identify the dimensions of the problem

On the basis of his or her assessment in Step 4, the EPIT identifies the various dimensions of the problem. Supporting data for each conceptual dimension are provided to show why this dimension is problematic. It is important to note that dimensions are presented in terms of behaviours (e.g., reading performance) or relevant constructs (e.g., self-perception) not by assessment devices used (e.g., Neale Analysis of Reading Ability) or by unintegrated data (e.g., child's views or parent's views).

Issues to consider

* Are all the problem dimensions presented?
* Are supportive data presented for all problem dimensions?
* Were the assessment devices used valid, reliable, culturally sensitive and relevant to clarifying the dimension reported?
* Do the data provided support the stated problem dimension?

Step 5. Integration of problem dimensions

a. Integrating hypotheses

The goal at this stage is to process the information sampled in a way which suggests causal relationships between the problem dimensions identified. The hypothesis chosen must be based on logic and/or sound research, and must help make sense of the information collected and lead to a sound rationale for intervention recommendations and actions.

Issues to consider

* Is the final hypothesis consistent with the data disclosed? In other words, has the EPIT made good use of the information collected when thinking about the case?
* Is there an alternative hypothesis which is consistent with the data?

b. Statement of priorities with rationale

The EPIT may give reasons for the selection of one or more of the dimensions as being a priority for intervention rather than targeting all the dimensions. Dimensions may be
selected as priorities because they are hypothesised as contributing to the others; or it is predicted that by focusing on X dimension(s) changes in the perceptions of the other problem areas are likely; or they require immediate intervention (e.g., child abuse, teacher or child mental health issues); or they are the only accessible dimensions (e.g., child's reading behaviour at school).

**Issues to consider**

* Have priority dimensions been selected or have all problems been targeted for intervention?
* Is the rationale for priority selection sound or expedient?

**Step 6. Feedback and agree problem analysis and devise intervention plan**

Based upon the integrating hypothesis, and knowledge of relevant research, an intervention is devised in consultation with the problem owner(s). The rationale for the intervention is always made explicit.

**Issues to consider**

* Is the intervention consistent with the causal integrating hypothesis and priority problem dimension(s) selected?
* Is the planned intervention ethical, developmentally appropriate and culturally sensitive?
* Do the people involved, including the EPIT, have the skills to implement the intervention?
* Is the intervention based upon sound logic and/or research, or does it reflect faddism?
* Are all parties agreeable to the intervention? Have teacher beliefs and constructs been explored prior to discussion of the intervention and any dissonance openly addressed and resolved?
* Is the intervention practical?
Step 7. Agree action plan

Once agreement has been reached on the nature of the problem situation, and the intervention plan to be adopted, then the EPIT and problem owner jointly produce an action plan. It is important in any action plan to record what is to be done, who will carry out tasks, when these are to occur, and how processes and outcomes are to be monitored and evaluated, recording this in a sequence. An action checklist would therefore include the following components:

a. specific outcomes (what is it staff want to achieve, under what conditions and when will it happen?);

b. criteria for success (how will staff know when they have achieved what they set out to?);

c. specific intervention steps (how do staff intend to guide the learning and reinforce that learning, including adaptations to the environment and how will staff manage resources for most effective action, dealing with possible obstacles, e.g., child absence, distractions and staffing issues?);

d. monitoring and evaluation considerations for both process and outcomes.

Issues to consider

* Have steps been taken to ensure that the plan is implemented adequately?
* Are the individuals involved committed to action?
* Do checks exist to ensure that agreed action is carried out?
* Is it clear how this particular intervention is going to improve the problem situation?
* Are systems in place to monitor progress and implementation?
* Have plans for ensuring maintenance and generalisation been drawn up?
Step 8. Evaluation of outcomes

This step involves a joint evaluation with all those who had been involved in trying to solve the problem situation. The participants evaluate the status of the problem following their efforts (this may involve further assessment such as a post intervention reading test to allow pre-post intervention comparisons). The participants consider further actions that may be needed (e.g., regular reviews of progress), maintenance procedures to ensure that the problem situation does not recur and what has been learnt that will be relevant to other similar problems in the future. It is important in outcome evaluation to obtain the views of all concerned with the problem situation, including the child, parents/carers and other staff. The results of the intervention are presented according to the original problem dimensions and the intervention is judged as successful, partially successful or unsuccessful, and action is taken accordingly.

Issues to consider

* Are the data sufficient to allow judgements about success to be made, e.g., number of observations taken?

* Do the data show a consistent pattern or are there inconsistencies which point to changes which should be made to make the intervention more successful?

* Were problems encountered in implementing the intervention which indicate a need to revise the problem analysis?

* Did the intervention increase or decrease others' dependence on the EPIT or de-skill others?

* What was learnt from the case, and what are the implications for future work?

Step 9. Self-reflection and critical evaluation

Although in this section, this step is presented as occurring at the end of the process, in reality evaluation or "reflection in action" happens throughout, since the EPIT is encouraged to critically consider his or her effectiveness at each step in the problem-analysis sequence. The task is to identify factors which supported and constrained effective functioning (e.g., "with hindsight, the lack of commitment by the class teacher at step 7 appears to have resulted from a lack of listening on my part at step 2, and thus
we ended up negotiating a brief which was vague and did not address the concerns of the class teacher as problem owner, or "by being unclear at step 2 about the rationale for classroom observation, the teacher became angry at step 6 as she had thought I was merely going to observe the child and not her interactions with the child").

EPITs (and educational psychologists) require regular opportunities for supported reflection on their practice (Lunt & Pomerantz, 1993). This may occur through supervision sessions where their work issues are opened up for scrutiny by a "critical friend". Anecdotal evidence suggests such sessions, if unstructured, can easily result in a long monologue where the "critical friend" is overwhelmed by detail, and confused as to their role. It is not surprising then that they end up either positively reframing difficulties or giving off-the-cuff advice. Although the supervisee may "feel better", their actual practice may have been left unchallenged, and thus any opportunity to engage in the double-loop learning required to alter their practice has been lost (Argyris, 1993). The problem-analysis framework and the emphasis on accessible reasoning provides a useful way of structuring such supervision sessions.

3. Summary
The problem-analysis framework as described within this chapter facilitates communication between all those involved with the case, provides checks that there is a coherent rationale for all EPIT action, outlines a clear basis for contracting the services to be delivered by the EPIT, and provides the means of considering the extent to which the contract has been fulfilled. The evaluation embedded within the problem-analysis model represents a further advance over existing problem-solving approaches. Criteria, against which the quality of the problem analysis can be judged, are available. These encourage critical self-reflection and support the development of practice through helping EPITs evaluate their contribution in achieving improved outcomes for children in partnership with others.

The problem-analysis approach therefore offers a framework for both collegiate support and accountability in educational psychology practice. It provides a clearly defined process within which a wide range of practice can be accommodated and
described using a common language. It requires that the evidential bases of all conclusions and the rationale for all decisions are made explicit. These aspects will greatly facilitate the ability of colleagues to support and challenge each other. Where there is disagreement between colleagues, the framework will also enable substantive issues to be quickly identified and should encourage a mode of resolution which focuses upon relevant evidence rather than unsubstantiated assertions.

Sigston (1992) points out that problem-solving approaches and alliances tend to assume that all consultations are concerned with "promoting the resolution of problems", as opposed to other agendas such as "securing additional or alternative resources" or "the EPIT aiming to be liked and a friend to the problem owner or school" or, and often related to the previous point, "focusing upon the easiest, and/or least controversial aspect of a problem".

Problem analysis cannot directly address such agendas, but it can make them explicit. In this respect, the importance of the first two steps in the framework cannot be overemphasised: clarifying the request and checking out the need for an EPIT's involvement (step 1), and negotiating and contracting the EPIT's role (step 2) are components which are conspicuously absent from most problem-solving approaches. In the course of some complex consultations, these steps may have to be re-traced in order to clarify expectations and diverging agendas.
APPENDIX ONE

MATERIAL RELATED TO STUDY ONE

Letter One  Covering letter to directors of training courses used to accompany Questionnaire A

Questionnaire A  Interviewing and problem solving (IPS) questionnaire
LETTER ONE: Covering letter to directors of training courses used to accompany IPS Questionnaire

Interviewing and problem solving skills project

I am an Associate Tutor at UCL undertaking research as part of a PhD. One of the studies involves surveying all the educational psychology training courses in England, Wales and Northern Ireland. The enclosed questionnaire takes about 30 minutes to complete and most people say they find it interesting and straightforward. The focus of the survey is on investigating aspects of the ways in which interviewing and problem solving are taught. The information will be collated globally, and thus individual training course will not be identified. Strict confidentiality is assured.

I would appreciate your support and assistance, and hope that the information collected will also be of value to all those who return questionnaires. I have enclosed the questionnaire, with a stamped return envelope and would ask that it be passed on to the person(s) most closely involved in teaching interviewing and problem solving, with this letter, asking if they would kindly complete and return it by the ______________. If there are any queries, please do not hesitate to contact me.

Finally, thanks again, and I look forward to receiving your questionnaire.

Yours sincerely

Jeremy Monsen
Researcher

Enclosed: IPS Questionnaire, return envelope.
QUESTIONNAIRE A
Interviewing and Problem Solving (IPS)

The questions below are designed to obtain information and views on how aspects of interviewing and problem-solving skills are taught on your course.

Instructions:
Please answer ALL questions honestly.
This questionnaire takes about 30 minutes to complete.

Section One - Interviewing

1. Does your course teach interviewing skills? (i.e. that is teaching trainees to conduct initial interviews with teachers who are referring children or young people to an educational psychologist whom they are having difficulties with.)

   1. Yes  2. No

   Comment

2. If YES, how many course hours are involved (approximately)

   1. 1-3  2. 4-6  3. 7-9  4. Other please specify
This is a TWO part question.

i Please tick the first box indicating those approaches you use on your course to teach interviewing skills.

ii Then tick the box on the 1 to 8 scale indicating how effective you believe each approach is to successfully teaching interviewing skills.

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What interviewing approach(es) do you teach on your course? (if appropriate, can you outline the steps in the approach(es) and/or include any supporting material)

What opportunities do you provide for trainees to have feedback on their interview skills and how are trainees’ skills rated?

Comment
6. **How important** are initial interviewing skills to the work of an educational psychologist?  
   - Not important  
   - Very important  

7. **How effectively** do you think your course teaches initial interviewing skills?  
   - Not effectively  
   - Very effectively  

8. How do you ensure that trainees are competent in conducting initial interviews?  

Comment
9. This is a TWO part question.

i. Please tick the first box indicating interview strategies you consider you cover on your course.

ii. Then tick the box on the 1 to 8 scale indicating how important you believe each strategy is to successful interviewing.

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364
It could be argued that the personality factors of the interviewer are actually more important than the more technical aspects for successful initial interviews with teachers (clients).

Tick the box on the 1 to 8 scale indicating how important you believe each domain is to successful initial teacher interviews.

a) **Openness** (ie fantasy, aesthetics, feelings, actions, ideas, values)

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b) **Agreeableness** (ie trust, straightforwardness, altruism, compliance, modesty, tender-mindedness)

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c) **Conscientious** (ie competence, order, dutifulness, achievement-striving, self-disciplined, deliberation)

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d) **Neuroticism** (ie anxiety, angry-hostility, depression, self-consciousness, impulsiveness, vulnerability)

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e) **Effective** (ie friendly, effective communicator, relaxed under pressure, leaves impression on people)

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f) **Extroversion** (ie warmth, gregariousness, assertiveness, activity, excitement-seeking, positive emotions)

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g) **Dominant** (ie argumentative, dramatic, speaking a lot, dominating conversation)

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h) **Non-Verbal** (ie expressive non-verbally, using face, eyes and gesture to encourage people, empathetic and supportive)

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Tick the box, on the 1 to 8 scale indicating how relevant each facet is for a successful (competent) interviewer.

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Section Two - Problem-Solving

(This section, its questions and format mirror those in section one.)

12 Does your course teach problem-solving skills? (ie ways of thinking through complex cases with teachers, for example the Cameron and Stratford (1987) framework)

1  YES  2  NO

Comment

13 If YES, how many course hours are involved? (approximately)

1  2  3  4  
1-3  4-6  7-9  Other, please specify

14 This is a TWO part question:

i Please tick the first box indicating those approaches you use on your course to teach problem-solving skills.

ii Then tick the box, on the 1 to 8 scale indicating how effective you believe each approach is to successfully teaching problem-solving skills.

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<td>b. follow-up readings</td>
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<td>c. role-plays (trainee - trainee)</td>
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<td>d. feedback on role-plays</td>
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<td>e. video or audio tape analysis of role-plays</td>
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<td>f. lecture input</td>
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<td>h. watching video of EP employing a problem solving approach</td>
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<tr>
<td>i. teach one framework in detail (ie to competency level)</td>
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<td>j. present a range of frameworks</td>
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<td>k. follow-up placement exercises (ie trainee demonstrating use of a problem solving approach)</td>
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15. What problem-solving approach(es) do you teach on your course?
(If appropriate can you outline the steps in the approach(es) and/or include any supporting material)

16. What opportunities do you provide for trainees to have feedback on their problem-solving skills and how are trainees skills rated?
Comment

17. How important are problem-solving skills to the work of an educational psychologist?
\[ \begin{array}{ccccccc}
& 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 \\
\hline
1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 \\
\end{array} \]
Not important Very important

18. How effectively do you think your course teaches problem-solving skills?
\[ \begin{array}{ccccccc}
& 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 \\
\hline
1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 \\
\end{array} \]
Not effective Very effective

19. How do you ensure that trainees are competent in using problem-solving skills?
Comment

368
This is a TWO part question:

i. Please tick the first box indicating problem-solving steps you consider you cover on your course.

ii. Then tick the box, on the 1 to 8 scale how important you believe each step is to successful problem-solving.

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- **a** define and clarify the problem situation
- **b** analyse the forces affecting the problem situation
- **c** encourage client to select a priority issue within the problem situation
- **d** collect information on the priority issue
- **e** identify probable factors contributing to the priority issue
- **f** specify a desired goal for change that will improve priority issue
- **g** jointly plan intervention with client
- **h** support client to implement intervention
- **i** evaluate the effectiveness of the actions undertaken and recycle through steps if necessary
- **j** Other(s) (please specify)
- **k** Other(s) (please specify)
- **l** Other(s) (please specify)

Not important Very important

1 2 3 4 5 6 7 8
It could be argued that the personality factors of the interviewer are actually more important than the more technical aspects for successful problem-solving with teachers (clients).

Tick the box on the 1 to 8 scale indicating how important you believe each domain is to successful problem-solving.

**a Openness** (ie fantasy, aesthetics, feelings, actions, ideas, values)

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**b Agreeableness** (ie trust, straight-forwardness, altruism, compliance, modesty, tender-mindedness)

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**c Conscientious** (ie competence, order, dutifulness, achievement-striving, self-disciplined, deliberation)

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**d Neuroticism** (ie anxiety, angry-hostility, depression, self-consciousness, impulsiveness, vulnerability)

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**e Effective** (ie friendly, effective communicator, relaxed under pressure, leaves impression on people)

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**f Extroversion** (ie warmth, gregariousness, assertiveness, activity, excitement-seeking, positive emotions)

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**g Dominant** (ie argumentative, dramatic, speaking a lot, dominating conversation)

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**h Non-Verbal** (ie expressive non-verbally, using face eyes and gesture to encourage people, empathetic and supportive)

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22. Tick the box, on the 1 to 8 scale indicating how relevant each facet is for a successful (competent) problem-solver.

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<tr>
<th>Facet</th>
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<td>f. straight-forwardness</td>
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<td>ae. values</td>
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23. Any other comments (Please use the back of this page if necessary)

Thank you very much for completing this questionnaire and for your assistance. Can you please return in the envelope provided.
APPENDIX TWO

MATERIAL RELATED TO STUDY TWO

Letter One   Introductory letter to potential participants
Letter Two   Briefing letter to participants at time 1
Letter Three  Briefing letter to participants at time 2
Letter Four   Covering letter for validation of case biography
Questionnaire D  Validation of case biography (VCB)
Letter Five   Covering letter for validation of model problem-analysis
Briefing Note Used at times 1 and 2
Questionnaire A  Background information (BI)
Questionnaire B  Written problem-analysis (WPA)
Questionnaire C  Perceptions of interview (PI)
Rating Form   Used at times 1 and 2
Behaviour Coding Form  Used at times 1 and 2
Case Biography Used at times 1 and 2
Model Problem Analysis  Used at times 1 and 2
LETTER ONE: Introductory letter to potential participants

Psychologist's interviewing skills research project

Earlier this year you were involved in interviews for the MSc Professional Training Course here at UCL. We would like to invite you back to be involved in an exciting new research project which is looking at psychologists' interviewing skills, and how these develop over time.

**The benefits to you are:**
- You will have an opportunity to gain some insight into this important aspect of the work of an educational psychologist.
- At the end of the study you will receive personal feedback on your interviewing skills.
- At the end of the study you will receive a copy of the results.
- All travelling expenses will be fully reimbursed.
- Food and refreshments will be provided.

**What will be involved:**
- You will give us about two hours of your time, up here at UCL, choosing either a day or an early evening slot, once at the beginning, and again at the end of the study.
- You will be videoed carrying out a half hour interview of a teacher, and then fill in three questionnaires (*four questionnaires at time 2*).

We would greatly value your involvement in this innovative study. Please do not hesitate to contact us if you have any queries about the project. Can we also assure you that your decision about participation in this study will in no way affect any future application you may make to University College London. All materials produced will be coded so you cannot be identified, and strict confidentiality will be maintained at all times.

Finally, **can you please ring through your acceptance (or non-acceptance),**
your name and contact number(s), and your preference for a day or an early evening interview slot on one of the following numbers: ______________, or ______________, as soon as possible, no later than ______________.

Thank you very much and we look forward to hearing from you.

Yours sincerely

Jeremy Monsen
Researcher
LETTER TWO: Briefing letter to participants at time 1

Interviewing skills research project

Thank you for agreeing to participate in this research project. I hope this briefing letter will address most of your questions and queries about what will occur when you come to University College London. Your interview date and time are enclosed.

1. Your two hours at the university will be spent as follows:
   (a) Conducting an initial interview: up to thirty minutes will be set aside.

   (b) Completing three questionnaires: up to one hour will be set aside.

   Refreshments will be provided between tasks.

2. About thirty minutes have been allotted for your initial interview. The initial interview is of a teacher whom you are seeing for the first time as if you were a qualified educational psychologist. As such it is an assessment interview. Please conduct the interview in any way which you feel will help you gain an understanding of the teacher's problem(s) and to begin to establish a possible future working relationship.

3. Although the interview in this research is standardised, the teacher you will be interviewing is using authentic case information. Please treat the interview as real. For example, if you think it appropriate to arrange a follow-up interview or something else, please do so. Please respond to whatever occurs as if this is a teacher you are interviewing for the first time as a regular part of your job as an educational psychologist.

4. About one hour has been allotted for completing the three questionnaires after the interview:
Questionnaire A asks general demographic details about yourself.

Questionnaire B asks four questions to structure your written case report based upon the interview. The four questions are given below and are designed to draw out your understanding of the problem/difficulty which the teacher presents to you during your interview.

Questionnaire C asks general questions about your perception of aspects of the interview task and its content.

5. Some of the people taking part in this research project will know others who are also involved. From a research point of view it is vital that you do not discuss the case you have interviewed with any of the other research participants until the end of the research period (e.g., once all the interviewing and taping is completed).

6. Finally, I am grateful for your participation in this study, particularly as I acknowledge that taping of the interviews may engender some feelings of anxiety. If you have any concerns regarding your involvement which you would like to discuss in advance, please do not hesitate to telephone me on either of the above numbers. I look forward to seeing you.

Yours sincerely

Jeremy Monsen
Researcher

Enclosed: Interview schedule and questions.
1. Name: ____________________________

2. Time and date of interview: ________________

3. Place: Room 219, 2nd Floor
          26 Bedford Way, London WC1E 0AP

4. I would like feedback regarding my interview skills, and written analyses once
data has been coded and analysed.

   YES/NO (please delete one)

5. Questions for your written report:

   i) Identify the various aspects of the teacher's presenting problem.

   ii) Describe, with reasons, the most important aspects of the case, and give
    reasons why others were less important.

   iii) Identify the probable current causes of factors influencing those aspects
    you identified as most important.

   iv) Describe, with reasons, the steps you would take/recommend regarding
    further assessment or intervention.
LETTER THREE: Briefing letter to participants at time 2

Interviewing skills research project

Thank you for once again agreeing to participate in the second phase of the Interviewing Skills Research Project. You will be undertaking very similar tasks to those that you carried out during phase one. The instructions for these tasks are almost identical, however, I hope this briefing letter will address any of your questions and queries about what will occur when you come to University College London.

1. Your two hours at the university will be spent as follows:
   (a) Conducting an initial interview: up to thirty minutes will be set aside.
   (b) Completing four questionnaires, up to one and a half hours will be set aside.

   Refreshments will be provided between tasks.

2. The initial interview is, once again, of a teacher (new) whom you are seeing for the first time as if you were a qualified educational psychologist. As such it is an assessment interview. Please conduct the interview in any way which you feel will help you gain an understanding of the teacher's problem(s) and to begin to establish a possible future working relationship.

3. Although the interviews in this research are standardised, the teacher you will be interviewing is again using authentic case information. Please treat the interview as real. For example, if you think it appropriate to arrange a follow up interview or something else, please do so. Please respond to whatever occurs as if this is a teacher you are interviewing for the first time as a regular part of your job as an educational psychologist.
4. Some of the people taking part in this research project will know others who are also involved. From a research point of view it is vital that you do not discuss the case you have interviewed with any of the other research participants until the end of the research period (e.g., once all the interviewing and taping is completed).

5. Finally, I am very grateful for your continued participation with this study, particularly as I acknowledge that taping of the interviews may engender some feelings of anxiety.

Could you please contact me confirming your attendance. If you have any concerns regarding your continued involvement please contact me as soon as possible.

I look forward to seeing you again.

Yours sincerely

Jeremy Monsen
Researcher

Enclosed: Interview schedule and questions.
1. Name: __________________________

2. Time and date of interview: __________________________

3. Place: Room 219, 2nd Floor  
26 Bedford Way, London WC1E 0AP

4. I would like feedback regarding my interview skills and written analyses once data has been coded and analysed.

   YES/NO (please delete one)

5. Questions for your written report:
   i) Identify the various aspects of the teacher's presenting problem.
   
   ii) Describe, with reasons, the most important aspects of the case, and give reasons why others were less important.

   iii) Identify the probable current causes of factors influencing those aspects you have identified as most important.

   iv) Describe, with reasons, the steps you would take/recommend regarding further assessment and intervention.
LETTER FOUR: Covering letter for Questionnaire D - validation of case biography (VCB)

Validation of case biography

Further to our recent telephone conversation, you are one of four senior educational psychologists whom I have asked to be involved in this validation exercise. Its purpose is to ensure that my own compilation of a case biography is realistic and valid. I will seriously consider your comments, and those of the other raters, and take them into account in the preparation of the final case biography.

The following briefly explains the background, and outlines how I would like you to approach your task. The case biography presents an overview of a teacher's (Anne Singleton's [Mona Ramsey's]) problem situation which involves one of her pupil's (Michael Toliver [Brian Hawkins]). It presents background information on the key participants, and a presentation of the various aspects of the problem. The case biography was written using actual case material taken from several cases referred to an educational psychology service.

Please read the enclosed Case Biography, and then complete Questionnaire D. Please feel free to make comments on the actual case biography and questionnaire since it is essential that I validate my own compilation if it is to be used for research purposes.

Thank you once again for your help.

Jeremy Monsen
Researcher

Enclosed: Case Biography and Questionnaire D.
QUESTIONNAIRE D

Validation of Case Biography (VCB)

The questions below are designed to obtain your views on various aspects of the case biography which you have just read.

Instructions:
Please tick the box which best represents your view of each question below. Please answer ALL questions.

Thinking of case work in general:

1. to what extent was the case like a real case?
   1  2  3  4  5  6  7  8
   □  □□□□□□□
   Very Realistic Not at all Realistic

2. overall how difficult was the case?
   1  2  3  4  5  6  7  8
   □ □ □ □ □ □ □ □
   Very Difficult Not at all Difficult

3. how complex was the case?
   1  2  3  4  5  6  7  8
   □ □ □ □ □ □ □ □
   Very Complex Not at all Complex

4. how familiar to you was the case?
   1  2  3  4  5  6  7  8
   □ □ □ □ □ □ □ □
   Very Familiar Not at all Familiar

5. What is your job title?

6. How many years work experience do you have as an Educational Psychologist?
   1  2  3  4
   □ □ □ □
   Under 5  5-9  10-14  15-20

Thank you very much for completing this questionnaire and for your assistance in general.

OFFICE USE ONLY

Subject Code □

1. □

2. □

3. □

4. □

5. □

6. □
LETTER FIVE: Covering letter for validation of model problem analysis

Validation of model problem analysis

You are one of four "experts" whom I have involved in this validation exercise. Its purpose is to ensure that my own understanding of the case used in study two (time 1, and time 2) is rigorous, and of a "high quality". I will seriously consider any of your comments, and those of the other experts, and take them into account in the preparation of the final Model Problem Analysis.

The following instructions explain the background, and outline how I would like you to approach your task. The model problem-analysis is in the form of an analysis of a teacher's problem situation, and is structured using the following four questions:

1. "Identify the various aspects of the client's presenting problem(s)".

2. "Describe, with reasons, the most important aspects of the case, and give reasons why others were less important".

3. "Identify the probable current causes of factors influencing those aspects you have identified as most important".

4. "Describe, with reasons, the steps you would take/recommend regarding further assessment or intervention".

The problem analysis was written as if based upon an initial interview with the class teacher, in an attempt to analyse those areas which were causing the teacher difficulty. As such the problem analysis does not attempt other kinds of analyses (e.g., the teacher's (or child's) intrapsychic history or family dynamics, except to the extent that they are involved in current problems for which the teacher has sought help). As you read and evaluate the problem analysis please make judgements about the extent to which it does what it sets out to do (i.e. analyse the teacher's current problems with the child). If you
feel this approach fails to take into account important aspects of the case please comment on this at the end of the report.

The kinds of concepts I would like you to judge the problem analysis by are:

1. **Completeness:** are any important aspects of the case missing?

2. **Clarity:** has the writer answered the questions in a way which makes his or her understanding clear?

3. **Well-argued:** has the writer presented sound theoretical or practical arguments to support their assertions?

4. **Specificity:** has the writer presented sufficient detail?

5. **Overall understanding:** what is your response to the understanding of the case demonstrated by the writer?

I would suggest you proceed in the following manner:

1. First read the **Case Biography**, this provides information about the teacher and the referred child.

2. Then read the **Model Problem Analysis**, and evaluate its merit as an analysis of the teacher’s problem situation.

3. Please make notes or ask questions in the right-hand column as you read, and please feel free to add any at the end of the sections or at the end of the whole document.
If you find little to question or comment on that is fine, please do not feel obliged to make long and involved comments, or to provide an alternative version unless you want to! At times you may feel that the problem analysis makes statements for which there are not sufficient data in the case biography. It would be helpful if you pointed out when this occurred. As well your comments may sometimes be made on the basis of your own theoretical knowledge and experience rather than on the basis of the data presented.

Finally, I will appreciate any comments that you do make as this process is essential in validating my own analysis of the problem situation if this is to be used in evaluating the understanding achieved by participants in the research project.

Once again thank you for your assistance.

Yours sincerely

Jeremy Monsen
Researcher

Enclosed: Case Biography and Model Problem Analysis.
BRIEFING NOTE (used at time 1 and time 2)

This briefing note was given to the participants prior to the interview tasks. At time 1 it showed the names of Anne Singleton and Michael Toliver, and at time 2 Mona Ramsey and Brian Hawkins.

WELCOME!

1. Your role
The initial interview you are about to undertake is of a teacher (Anne Singleton or Mona Ramsey) whom you are seeing for the first time as if you were a qualified educational psychologist. As such it is an initial assessment interview. Please conduct the interview in any way which you feel will help you gain an understanding of the teacher's problem(s), and to begin to establish a possible future working relationship.

Although the interview used in this research is standardised, the teacher you will be interviewing is using authentic case detail. Please treat the interview as "real". For example, if you think it appropriate to arrange a follow-up interview or something else, please do so. Please respond to whatever occurs as if this is a teacher you are interviewing for the first time as a regular part of your job as an educational psychologist (or your understanding of what that role might entail).

2. Background information
(Anne or Mona) is in her second year of teaching working in a large inner city primary school. She has a class of 35 nine and ten year olds whom she has been working with for about one term. She is very stressed by one particular pupil's behaviour (Michael or Brian). (Michael or Brian) is non-compliant and increasingly aggressive. His progress in basic literacy and numeracy skills is also a concern.

3. Reason for the initial discussion
Following recent discussions with (Anne's or Mona's) Special Educational Needs Co-ordinator (SENCo) and headteacher, she has asked for an initial discussion with the
school's link educational psychologist. You are the school's link educational psychologist, and have agreed to meet this teacher to discuss the problems she is experiencing.

You will have about 30 minutes to interview the teacher.

THANK YOU AND GOOD LUCK!

Jeremy Monsen
Researcher
Enclosed: Briefing note, paper and pen.
### QUESTIONNAIRE A

**Background Information (BI)**

*The questions below are designed to obtain information on aspects of your background and experience.*

**Instructions:**
Please tick the relevant category for each of the questions below. Please answer ALL questions.

<table>
<thead>
<tr>
<th>1. Age:</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 26</td>
<td>26-35</td>
<td>36-45</td>
<td>46-65</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Gender:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Female</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Years of teaching experience:</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 2 Yrs</td>
<td>2 Yrs</td>
<td>3 Yrs</td>
<td>4 Yrs</td>
<td>5 Yrs</td>
<td>Over 5 Yrs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. What type of first degree do you have?</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BSc</td>
<td>BA</td>
<td>BEd</td>
<td>BSocSCI</td>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. If awarded with honours what level did you obtain? (Please specify e.g. 1.1, 2.1)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>6. What was your first degree major?</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Major</td>
<td>Double Major</td>
<td>Non Psychology Major</td>
<td>Supporting Major</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. Please list any post-graduate qualifications which you hold? (e.g. PGCE, Masters, PhD)</th>
</tr>
</thead>
</table>

OFFICE USE ONLY

<table>
<thead>
<tr>
<th>Subject Code</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Initial Interview Task</th>
</tr>
</thead>
</table>

389
8. How many years has it been since you obtained the qualification which gave you Graduate Basis for Registration of the BPS?

<table>
<thead>
<tr>
<th>Under 3 Yrs</th>
<th>3 Yrs</th>
<th>4 Yrs</th>
<th>5 Yrs</th>
<th>6 Yrs</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

(please specify)

9. Have you undertaken any counselling or related training?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

9a. If YES please specify the type of training (i.e. Diploma, certificated course, one-day course) and model taught (i.e. humanistic, solution focused approaches)

10. Have you used your counselling training?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

11. Have you ever been interviewed by, or observed an interview involving an educational psychologist?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

12. Please add any other relevant information.
QUESTIONNAIRE B

Written Problem Analysis (WPA)

Now that the interview is completed please write a report analysing the client's problem(s). A senior colleague who is not familiar with the case should be able to understand your written analysis. Use supporting evidence from your interview whenever necessary.

Instructions:
Please complete the following FOUR sections.
Please answer ALL sections as fully as possible, using the timings as a guide.

Background Information and Reason for Discussion
(Please refer to the briefing note given out before the interview)
1. Section One

Instructions:
Identify the various aspects of the presenting problem(s)
(Allow about 15 minutes for this section)
2. **Section Two**

**Instructions:**
Describe, with reasons, the most important aspects of the case, and give reasons why others were less important.
(Allow about 15 minutes for this section)
3. Section Three

Instructions:
Identify the probable current causes of factors influencing those aspects you have identified as most important
(Allow about 15 minutes for this section)
4. **Section Four**

*Instructions:*
Describe, with reasons, the steps you would take/recommend regarding further assessment or intervention
(Allow about 15 minutes for this section)

---

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7. □
8. □
9. □

---

Thank you very much for completing this questionnaire and for your assistance.
Now please complete Questionnaire C.
**QUESTIONNAIRE C**

**Perceptions of Interview (PI)**

The questions below are designed to obtain your reactions to the interview which you have just completed.

**Instructions:**
- Please tick the box which best represents your view of each question below.
- Please answer ALL questions.

1. **How familiar** to you was the initial interview task?
   - 1 2 3 4 5 6 7 8
   - Very Familiar
   - Not at all Familiar

2. **How complex** was the initial task?
   - 1 2 3 4 5 6 7 8
   - Very Complex
   - Not at all Complex

3. **Overall, how difficult** was the initial interview task?
   - 1 2 3 4 5 6 7 8
   - Very Difficult
   - Not at all Difficult

4. **To what extent** was the case like a 'real' case?
   - 1 2 3 4 5 6 7 8
   - Very Realistic
   - Not at all Realistic

5. **How convincing** was the actor in their portrayal of the case?
   - 1 2 3 4 5 6 7 8
   - Very Convincing
   - Not at all Convincing

6. In your view what is the purpose of an initial interview?
7. This is a two part question:
   a. Please tick the first column for interview strategies you consider you used during the interview.
   b. Then circle on the 1 to 5 scale how important each strategy was to preparing your problem analysis.

<table>
<thead>
<tr>
<th></th>
<th>Very useful</th>
<th>Not at all useful</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. open questions</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>b. closed questions</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>c. sharing your reasoning aloud</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>d. paraphrasing client statements</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>e. reflecting back to client</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>f. giving advice/suggestions</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>g. confronting/challenging client</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>h. giving information</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>i. gathering information</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
</tbody>
</table>

Please add any other strategies not already covered:

j. □ □
k. □ □
l. □ □
m. □ □

8. Overall, how would you rate your problem analysis?

   1 2 3 4 5 6 7 8

   High Quality Analysis

   Low Quality Analysis

---

Thank you very much for completing this questionnaire and for your assistance in general.
**Initial Interview Statement Type Coding Form (IISTCF)**

**Definitions of Codes**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TNIU</td>
<td>Total number of interviewer utterances</td>
</tr>
<tr>
<td>NIARS</td>
<td>Number of interviewer accessible reasoning statements</td>
</tr>
<tr>
<td>NIOQ</td>
<td>Number of interviewer open questions</td>
</tr>
<tr>
<td>NICQ</td>
<td>Number of interviewer closed questions</td>
</tr>
</tbody>
</table>

**Instructions**

Please refer to the rater’s guide for definitions and examples.

1. Count the total number of interviewer utterances.

\[
\text{TNIU} = \begin{array}{c|c}
\text{1st} & \text{2nd} \\
\hline
\end{array}
\]

2. Count the total number of interviewer accessible reasoning statements.

\[
\text{NIARS} \times 100 = \begin{array}{c|c|c|c|c|c|c}
\text{TNIU} & \text{1st} & \text{2nd} & \text{100} & \text{100} & \text{100} & \text{100} \\
\hline
\end{array}
\]

3. Count the total number of interviewer open questions.

\[
\text{NIOQ} \times 100 = \begin{array}{c|c|c|c|c|c|c}
\text{TNIU} & \text{1st} & \text{2nd} & \text{100} & \text{100} & \text{100} & \text{100} \\
\hline
\end{array}
\]

4. Count the total number of interviewer closed questions.

\[
\text{NICQ} \times 100 = \begin{array}{c|c|c|c|c|c|c}
\text{TNIU} & \text{1st} & \text{2nd} & \text{100} & \text{100} & \text{100} & \text{100} \\
\hline
\end{array}
\]
**Instructions:**

1. Rate the written problem-analysis using the nine scales covered in this rating form. Refer to the rater's guide, the case biography and the model-problem-analysis to check definitions and examples.
2. Please read each scale and its descriptors carefully, then circle on the 1 to 8 scale the number that best represents your evaluation.

## SECTION A Aspects of the Problem

"Identify the various aspects of the presenting problem(s)."

### 1. Accuracy:
To what extent are the identified aspects consistent or inconsistent with the factual details of the case?

<table>
<thead>
<tr>
<th>Scale</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>All consistent</td>
</tr>
<tr>
<td>2</td>
<td>More consistent than inconsistent</td>
</tr>
<tr>
<td>3</td>
<td>Average</td>
</tr>
<tr>
<td>4</td>
<td>More inconsistent than consistent</td>
</tr>
<tr>
<td>5</td>
<td>Inconsistent</td>
</tr>
</tbody>
</table>

### 2. Completeness:
To what extent are major aspects identified or omitted?

<table>
<thead>
<tr>
<th>Scale</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>All aspects identified</td>
</tr>
<tr>
<td>2</td>
<td>Most aspects identified</td>
</tr>
<tr>
<td>3</td>
<td>Average</td>
</tr>
<tr>
<td>4</td>
<td>Most aspects omitted</td>
</tr>
<tr>
<td>5</td>
<td>All aspects omitted</td>
</tr>
</tbody>
</table>

### 3. Clarity:
To what extent are the aspects of the problem situation identified in a clear and orderly manner?

<table>
<thead>
<tr>
<th>Scale</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>All clear</td>
</tr>
<tr>
<td>2</td>
<td>Most clear</td>
</tr>
<tr>
<td>3</td>
<td>Average</td>
</tr>
<tr>
<td>4</td>
<td>Most not clear</td>
</tr>
<tr>
<td>5</td>
<td>All not clear</td>
</tr>
</tbody>
</table>
SECTION B  Relative Importance of Aspects of the Problem

"Describe, with reasons the most important aspects of the case, and give reasons why others were less important."

4. Agreement between Writer and Experts:
What is the degree of agreement between the problem-analysis writer's views and the experts' views regarding the relative importance of various aspects of the problem?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong agreement</td>
<td>Mainly agreement</td>
<td>Average</td>
<td>Mainly disagreement</td>
<td>Strong disagreement</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Soundness of Argument for Relative Importance of Aspects:
How sound are the arguments presented in support of the problem-analysis writer's views regarding the relative importance of the various aspects of the problem?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very sound</td>
<td>Mostly sound</td>
<td>Average</td>
<td>Mostly unsound</td>
<td>Very unsound</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION C  Causes of the Priority Problem

"Identify the probable current causes of factors influencing those aspects you have identified as most important."

6. Soundness of Argument for Causes of Important Aspects:
How sound are the arguments presented by the problem-analysis writer for the causes of the aspects of the problem identified as being most important in Section two of the Written Problem-Analysis?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very sound</td>
<td>Mostly sound</td>
<td>Average</td>
<td>Mostly unsound</td>
<td>Very unsound</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SECTION D  Next Steps

"Describe, with reasons the steps you would take/recommend regarding further assessment or intervention."

7. Specificity of Next Steps:
   To what extent are the problem-analysis writer’s plans taken as a whole, detailed or specific?

   1  2  3  4  5  6  7  8
   □ □□□□□ □
   Very specific  Mostly specific  Average  Mostly detailed  Very detailed
   □ □□□□□ □

8. Appropriateness of Next Steps:
   To what extent are the suggested next steps appropriate, given the case evidence, accepted practice, and relevant theory and research.

   1  2  3  4  5  6  7  8
   □ □□□□□ □
   Entirely appropriate  Mostly appropriate  Average  Mostly inappropriate  Entirely inappropriate
   □ □□□□□ □

9. Completeness of Next Steps:
   To what extent do the next steps address all those aspects of the problem which the problem-analysis writer has identified as being most important?

   1  2  3  4  5  6  7  8
   □ □□□□□ □
   Covers all aspects  Mostly covers aspects  Average  Mostly omits aspects  Omits all aspects
   □ □□□□□ □

10. Total Scale Score (1-9)

Thank you very much.
CASE BIOGRAPHY USED AT TIME 1 AND 2

The following sections describe the main characters involved in the problem scenario which was used as the basis of the model problem analysis. This analysis was then used as the basis of two teacher interview tasks. Material presented in the background information, and facts of the case sections were used by the actors to assist them, in not only learning the case, but also in developing their characterisation of the teacher. This was fundamental in achieving consistency between the two interview situations.

1. PROBLEM SITUATION

1.1. Identifying information
Focus child's name: Michael Toliver [Brian Hawkins]

Age: 9 years

Teacher: Anne Singleton [Mona Ramsey]

1.2. Background information
Anne Singleton [Mona Ramsey] is a 30-year-old Junior school teacher working at Melville [Knighton Road] Primary, a large inner city school in London. This is Anne's [Mona's] second year of teaching. She reports that she was well-supported during her first year, which she did find stressful, but not too problematic. She now finds herself with an older class of 35 nine and ten year olds, with a wide range of special needs concerns, including learning, emotional and behaviour difficulties.

Prior to requesting the initial interview with the school's link educational psychologist she had been working with the school's Special Needs Co-ordinator (SENCo) on reviewing and developing stage three behaviour and learning plans for some of her pupils. Partly as a result of these sessions, and the increasingly non-compliant
behaviour of Michael Toliver [Brian Hawkins], she requested assistance from the link educational psychologist.

The difficulties with Michael [Brian] are causing Anne [Mona] some distress. Though Anne [Mona] tries to meet Michael's [Brian's] needs she argues that his "behaviour isn't fair to the other children" or to her. Michael's [Brian's] "constant misbehaviour takes up valuable teaching time, and is very wearisome". Michael [Brian] is reported by the class teacher to have made limited progress academically, be easily distracted with a limited attention span, prone to shouting and calling out in class, sometimes using abusive language, and will on occasions kick furniture, and over-react emotionally. The class teacher would like to manage the situation more effectively, and has requested an initial meeting with the school's educational psychologist to assist her to review her situation, and plan some ways forward. The initial interview represents Anne's [Mona's] first attempt to talk with an educational psychologist about her difficulties in managing Michael [Brian]. Neither Anne [Mona] nor Michael [Brian] has had any previous contact with an educational psychologist.

2. FACTS OF THE CASE

2.1. Background information on Anne Singleton [Mona Ramsey]

1. Anne [Mona] came to teaching as a mature student, following a successful career in advertising. After almost five years within the business sector she decided that she wanted a change, and a move to a more service, child-orientated role.

2. Some three years ago, after a great deal of soul searching, Anne [Mona] went back to Teachers' College to complete her teaching qualification.

3. Upon reflection Anne [Mona] describes her time at Teachers' College as "socially wonderful, like a second adolescence really, the relationships between tutors and trainee teachers was relaxed, and undemanding", but now that "I have experienced teaching, it was not rigorous, thorough nor critical enough; I now
feel, in certain core areas ill-prepared for teaching, especially classroom management, and curriculum planning; the tutors assumed we would pick it all up on placement”.

4. Anne [Mona] has described herself as being an "organised sort of person". But she is the first to acknowledge that teaching has proved to be "harder and more demanding" than she first thought.

5. She finds it difficult to prioritise tasks, and gives her full energy to most of what she does. She ends up working most evenings preparing materials for the class, marking, or doing administrative jobs. However, a lot of her energy is taken up with "busy work" activities which contribute little to the final task (e.g., preparing "beautiful" work sheets for a one-off spelling activity).

6. At the moment, the issues she is concerned about revolve around the amount of time needed to prepare suitable curricula for the diverse range of child needs in her class, her lack of experience with classroom behaviour management strategies, and dealing more effectively with Michael [Brian]. For example, following a session with the school’s SENCo she set up, with a lot of preparation (beautifully coloured, laminated behaviour and star charts, and sets of printed class rules), a whole class assertive discipline plan. However, it did not appear to work straightaway, and as preparation for her reading groups had suffered she abandoned virtually the whole plan. This confused some of the children, including Michael.

7. Currently she tries to ignore most of Michael's [Brian's] disruptive behaviour, as far as is possible, until it "gets out of hand". It would be true to say that Anne [Mona] is not consistent in following through her plans for Michael [Brian]. Following a suggestion by the SENCo, and headteacher, as a result of the "failure" of the assertive discipline programme, she is using a modified star chart for "good" behaviour for both Michael [Brian] and the whole class. But this has
not proved very effective either for Michael [Brian] who she argues is "hardly ever good", and also, "why should he get a reward for doing what the other children do automatically, it isn't really fair". As with the assertive discipline plan, the star chart is not really used consistently or regularly.

8. So she usually "tells him off", and increasingly is sending him straight to the headteacher. She accepts that this is not ideal, and is really a last resort, but justifies it by saying that it "gives the class, and me a break from him".

9. At a recent staff appraisal, carried out by her headteacher, Jim Graig [Murray Wilson], a range of strengths were identified, in particular Anne's "conscientiousness, and openness".

10. The improvement suggestions offered by her headteacher did not come as a surprise to Anne [Mona], and indicated that she needed to work on her curriculum planning, in particular differentiation (she has been giving Michael [Brian], in particular, very easy worksheets, which she argued he needed because he had missed so much - unfortunately, the worksheets are not pitched at his level, and he has become frustrated and bored), and classroom management (lack of consistency, structure and purpose). Anne did accept that part of the reason for giving him the worksheets was that she hoped that "easy work would keep him busy, and out of trouble".

2.2. Background information on Michael Toliver [Brian Hawkins]
1. Michael [Brian] is a nine-year-old boy who arrived at Melville [Knighton Road] Primary over 12 months ago.

2. Since starting school at the age of five, he has attended two different schools.

3. He was initially placed at stage two of the Code of Practice (1996) for learning
and behavioural difficulties by the school's SENCo. At the time of the initial interview the school had not received any information from his previous schools.

4. Michael [Brian] has been in Anne Singleton's [Mona Ramsey's] class for about two terms.

5. The focus for the school has largely been upon his behaviour difficulties as they argued "how can we teach him unless he is settled".

6. He is easily distracted with a limited attention span, prone to shouting and calling out in class, and generally disrupts Anne's [Mona's] teaching with a wide range of attention-seeking behaviours (e.g., coming up to her whilst she is teaching a small group, and asking her to repeat instructions, or asking how to do an activity). The teacher usually becomes annoyed as she has usually given the group (or class) the instructions several times before, but she does attend to him, and thus increases the likelihood of future interruptions.

7. Half way through the previous term he was moved to stage three of the code of practice as he was not responding to the stage two level of intervention. This intervention mainly consisted of ignoring minor misbehaviour, and giving him stars when he was good. The stage three intervention was very similar to the previous one, except that the teacher tried to meet with Mrs Toliver [Hawkins] more regularly (once a month rather than once a term) to seek her ideas, and explain what they were trying to do at school. However, in practice very few meetings have actually occurred.

8. The class teacher reports episodes of aggressive behaviour including kicking desks, throwing chairs, and running upset out of class, often in tears. These episodes occurred about two times per week on average. The class teacher is concerned that the frequency of such episodes "seems to be getting worse", and is worried about the effects on her and the class.
9. An analysis of anecdotal classroom and playground behaviour records kept by the school and class teacher indicates the following patterns:

a. Michael [Brian] is usually out of his seat, and approaches a small group of pupils, often he will try to take a pencil, rubber, or book, or tries to talk with them. There is often a brief verbal exchange which has sometimes appeared to include teasing, and attempts to "wind Michael [Brian] up" (e.g., "you're stupid").

b. Michael [Brain] begins to shout or swear at the group, sometimes kicking furniture. One of the other pupils usually then retaliates (verbally), often resulting in Michael [Brian] crying. To date Michael [Brian] has not hit other pupils, but usually lashes out at class furniture. But school staff are increasingly concerned that unless something is done it is only a matter of time before he will be hitting other children, and possibly staff.

c. In the playground Michael [Brian] tends to roam around the grounds annoying other children by interrupting their games. If problems are noticed by staff they usually bring him directly inside, to sit in a classroom for the remainder of the break period. He is often given attention by staff, especially if he is crying.

10. Michael [Brian] spends little time on his school work. He usually arrives at school between 9.15 and 9.30 am, two to three times a week, and returns to class slightly late after breaks. Anne's [Mona's] approach to this has again been inconsistent and erratic, sometimes she will ignore his lateness, other times she will shout at him, and on other occasions, depending upon her mood, will send him to the headteacher. The headteacher has written to Mrs Toliver [Mrs Hawkins], and she has said she will make sure he is on time.

11. He has completed four pieces of work to date in contrast to the average 20 pieces completed by his classmates. Again, Anne's approach has been inconsistent,
sometimes she will make him stay in at break times to complete work, on other occasions she will just ignore him.

12. The SENCo has recently conducted a classroom observation looking at, among other things, Anne's [Mona's] class management, and Michael's [Brian's] on-task levels. Results indicated that Michael [Brian] was on-task for only 20% of a one hour language lesson.

13. Michael [Brian] tends to ignore teacher instructions. During the one-hour classroom observation he ignored six out of the seven teacher instructions directed at either him, or the group he was in. There were no firm, nor clear consequences for his non-compliance, and unless Michael [Brian] became loud or aggressive Anne [Mona] tended to ignore him. There were no positive statements directed at Michael [Brian], even though there were times when he was on-task, and compliant.

14. The class teacher reports that often non-compliance is accompanied by verbal abuse, and increasingly aggression (e.g., slams desk lid down, slams door, kicks chair).

15. Michael's [Brian's] classroom assistant has recently reported to the teacher her concern that "Michael [Brian] seems increasingly unhappy, and unsettled".

16. In contrast with these behaviours Michael's [Brian's] mother reports that he helps his older cousin Chris [Richard] out on a local paper round, delivery papers, and collecting money with no problems having been reported to her by the paper company.

17. As a result of the SENCo's observation visit, at least two after school sessions were organised for Anne [Mona]. The focus of these sessions were largely on planning, and going over stage three IEPs (Individual Education Plans). Anne
Mona viewed the sessions as useful, but found translating some of the ideas back to her own classroom difficult. She mentioned to the SENCo that she may learn better from actually observing practice, and then getting feedback on how well she was able to match it in her class.

18. The headteacher also agreed to assist, and made it clear to Anne that sending Michael to work with him in his office was to be used as a last resort. Unfortunately, Anne is using the "last resort", more and more frequently.

19. Michael lives at home with his mother (aged in her early 40s) and younger brother (aged about four years). His birth-father left when he was young, and neither Michael nor his mother has had any recent contact.

20. Mrs Toliver currently works from approximately 7 to 10 am, and again from 3 to 8 pm at two different administrative jobs.

21. It has been suggested to her by her mother that she gives up one of her jobs, and spends more time at home. However, Mrs Toliver stated that she liked both jobs, and "Michael would do what he liked anyway".

22. Michael's grandmother (aged in her 60s) cares for the children at home whilst she is away, but has limited control of the boys. Michael has mentioned that he will "sneak-out", and his grandmother "doesn't even know". The class teacher reports that the grandmother is partially deaf, and has said that she feels she is "really too old to care for the boys".

23. Mrs Toliver indicated at a recent parent-teacher meeting that she would not have any time to help with any further "home-school" behaviour programmes as the last one did not work. The school had tried a home-school behaviour book, writing down both good and bad things that Michael did.
Unfortunately, this book was not set up adequately by Anne [Mona], and became far too focused upon all the "bad things that had happened". The idea had been that Michael's [Brian's] mother and grandmother could have reinforced good behaviour, and put sanctions on bad behaviour at home. Mrs Toliver [Hawkin's] added that she would be happy with whatever the school thought best for Michael [Brian].

24. Anne Singleton's [Mona Ramsey's] impression of Mrs Toliver [Hawkins] is that she is trying hard to do the right thing but is either unable or unwilling to follow much through.

25. The grandmother occasionally comes up to school, and it was during one of these visits that she reported to the class teacher that Mrs Toliver's [Hawkins] "ex-partner (not Michael's [Brian's] birth-father) occasionally stayed in the house, and that he physically disciplines him". The school is monitoring for any signs of abuse, and has raised the case confidentially with social services.

26. She also added that Michael [Brian] comes home from school about 5 pm, and frequently "disappears" during the day at weekends.

27. Michael [Brian] says he spends most of his time "playing around the arcades" with his older cousin Chris [Richard] who is now 13 years old.

28. His literacy and numeracy skills are about two years behind his chronological age (as measured by a range of reading and numeracy assessments, for example, the Neale Analysis of Reading Ability (Revised), and the New World Maths Test).

29. There were questions raised about whether Michael had learning difficulties. However, the class teacher considered that given the amount of time that he had spent either "off-task", or "out of class" she feels that he "has a good capacity for learning".
30. The headteacher, who has worked with Michael [Brian] indicated that he is "very quick to master new concepts", though he noted that he would often have to repeat instructions, and that he settled down, "when I am firm, but very positive".

31. It was concluded that Michael [Brian] had a "good capacity for learning", but that he was underachieving because of emotional and behavioural problems.

32. Through the school's special educational needs funding the class receives five hours a week of classroom assistant support. In addition to this Michael [Brian] receives half an hour of one-to-one reading out of class, and an hour of in-class support per week, provided by a classroom assistant. However the classroom assistant is often seen working with other pupils, or putting up displays. The headteacher is very aware that current arrangements for special needs children in his school could do with a rethink, in particular the use of classroom assistant support, and the setting up and monitoring of programmes.

33. The classroom assistant reported that she spends most of their sessions settling Michael [Brian] down, and noted that she had to repeat instructions, and did wonder about his hearing. But she was confused because "some days he was fine, and on other days needed instructions repeated". She wondered whether this was part of his attention-seeking problem, or that he just wanted to get out of work. She raised her concerns with the class teacher.

34. Michael [Brian] has a record of poor health (e.g., colds, nasal problems), and associated school absences. However, his attendance to date, has not been identified as a major issue.

35. One of the teacher's concerns centres around possible hearing difficulties (e.g., glue ear). Michael [Brian] had grommets fitted when he was aged about six and again when aged about eight, though hearing tests by the school nurse have shown no problem.
36. At the beginning of term the teacher noticed that there was a fluid discharge from Michael's [Brian's] right ear. However, though his hearing seems to have "improved", and she has not seen any more discharges, she wonders whether there is still a residual problem of a fluctuating hearing loss.

37. The class teacher indicates that no one has been able to "get close" to Michael [Brian] to enable him to share his perceptions of his life, school and home circumstances.

38. The class teacher's perception is that Michael "seems to want friends but his volatile behaviour puts them off". He "does not get on well with his class mates" and has "no real friendships". The class teacher reported that Michael [Brian] "doesn't really seem to know how to initiate contact with his peers in a way which doesn't end in tears".

39. Michael spends a lot of time with his older cousin Chris [Richard]. Chris [Richard] used to go to Melville [Knighton Road] Primary where he "was always in trouble, and had a really bad reputation". There are concerns about how suitable this "friendship" actually is.

40. When people try to talk with Michael [Brian] he either "clams-up" or tells people that he "can't do it", "I'm useless", or "I don't want to do it". He appears to school staff as "a needy boy who doesn't think much of himself". However, he rejects any attempt to talk about things.

3. SUMMARY OF KEY ASPECTS OF THE PROBLEM SITUATION

3.1. Starting point of the interview

Anne Singleton [Mona Ramsey] has asked for an initial interview with the school's link
educational psychologist so she can talk about her difficulties managing Michael's [Brian's] behaviour. She realises that there is a problem, and would like to be able to manage Michael [Brian] more effectively.

3.2. Precipitating factors
Michael's [Brian's] non-compliant and aggressive behaviour is reported by the teacher to be getting worse. This is putting increased pressure upon Anne Singleton [Mona Ramsey]. Following preparation of level three Individual Education Plans (IEPs), and a long talk with the school's SENCo, and the headteacher during appraisal, Anne arranged to meet with the school's link educational psychologist.

3.3. State of mind and interpersonal style
Anne Singleton [Mona Ramsey] is described by colleagues as "usually being a positive person" but lately is troubled about Michael [Brian], and lacks confidence that she knows what to do. She is straightforward and wants to talk through and resolve her problems.

Michael Toliver [Brian Hawkins] usually says very little at school, he keeps to himself, and only seems to interact with others in an aggressive manner. He is easily upset, and lately has been throwing furniture around the class, slamming doors, and running from the class in tears.

3.4. Core governing constructs
Anne Singleton's [Mona Ramsey's] behaviour is guided by:

a. A desire to be competent: e.g., she wants to learn how to deal with Michael [Brian] more effectively, and organise and manage the class and curriculum more successfully. She desires to be a "good teacher".

b. A desire to cope with problems by dealing with them: e.g., she readily seeks help from
people whom she feels can be useful in resolving difficulties. She has talked with the school's SENCo, headteacher, and has involved Michael's [Brian's] family to try and resolve problems. Anne [Mona] attempts to deal with problems early on and in an up front manner before they get out of hand. However, she lacks skills in organising information gained, and in planning and implementing programmes.

**Michael Toliver's [Brian Hawkin's] behaviour is guided by:**

a. **A desire for attention, affection and approval**: e.g., he wants to be liked by people, and to get close to them but his current approach has the opposite effect. People avoid Michael [Brian], and assume negative motives for his actions. This reaction from others encourages more extreme behaviour and leads to him feeling frustrated, insecure and anxious.

b. **Coping with problems by avoiding and denying them**: e.g., he does not truly open up to anyone, and tries to keep away from adults, as far as possible, especially his mother and grandmother. He feels that no-one is there to protect or save him except his cousin Chris [Richard].

c. **A desire to identify with Chris [Richard] his older cousin**: e.g., he wants to be like Chris [Richard], and actively seeks his approval. Chris [Richard] has his own emotional problems, and is very self-absorbed. Michael [Brian] has a tendency to try to talk like him, and thinks he's more like Chris [Richard] and his family than his own.
MODEL PROBLEM ANALYSIS

1. "Identify the various aspects of the presenting problem(s)"

**Aspect 1. General health and a history of hearing difficulties**

Michael [Brian] is reported to have a history of poor general health. The teacher's main concern in this area centres around the effects of a long history of hearing difficulties (e.g., glue ear). Michael [Brian] had grommets fitted when he was aged about six, and again when aged about eight. At the beginning of term the teacher noticed that there was a fluid discharge from Michael's [Brian's] right ear. Though his hearing may have appeared to have "improved" recently, and there may have been no reported discharges, it is common for children with a long history of glue ear to have a residual problem of fluctuating hearing loss. This means that the child can have periods when their hearing may appear "normal", and nothing is detected on tests. It could well be that part of Michael's [Brian's] difficulties with school work, social relationships, and emotional reactions could be due, in part, to frustration as a result of not being able to hear, and thus concentrate adequately, and frustration at not knowing why he is feeling the way he does.

**Aspect 2. Lack of adequate supervision at home**

Michael [Brian] lives at home with his mother and younger brother. Mrs Toliver [Hawkins] currently works at two different administrative jobs. Mrs Toliver [Hawkins] reports that her mother cares for the children at home whilst she is away, but has limited control of the boys. The grandmother herself has mentioned that she has a hearing problem, and feels too old to manage the boys. The grandmother has suggested to her daughter that she gives up one of her jobs, and spends more time at home. However, Mrs Toliver [Hawkins] has stated that she likes her work, and that "Michael [Brian] would do what he liked anyway".

Mrs Toliver's [Hawkins] "ex-partner (not Michael's [Brian's] birth-father) occasionally stays in the house, and he physically disciplines Michael [Brian]". Michael [Brian] tends to comes home from school about 5 pm, and frequently "disappears" during
the day at weekends, with no-one knowing where he is, though Michael [Brian] is reported as saying that he spends most of his time "playing around the arcades" with his older cousin Chris [Richard].

Available information suggests a lack of adequate supervision at home. Michael [Brian], and his younger brother appear to be left to their own devices. No-one in the family appears to know exactly where Michael [Brian] goes, or what he gets up to. Michael [Brian] appears to have few consistent boundaries set upon his behaviour at home. He seems to be able to pretty much "do as he pleases". It could well be that at school he attempts to behave as he does at home. Most children and young people need consistent, firm boundaries placed upon their behaviour. One of the usual outcomes for the child is a sense of security and confidence. Unfortunately, it would appear that his class teacher does not know how to manage the classroom context to provide Michael [Brian] and other children with firm and consistent boundaries. There is also the possibility of physical abuse.

**Aspect 3. Limited friendship-making skills with associated lack of positive friendships**

The class teacher reported that Michael [Brian] "does not get on well with his classmates", and has "few real friendships". His teacher indicates that Michael [Brian] "seems to want friends but his volatile behaviour puts people off". Michael "doesn't really seem to know how to initiate contact with his peers in a way which doesn't end in tears". His only consistent contact is his cousin Chris [Richard], and there are concerns about the suitability of this "friendship". Available information suggests that Michael [Brian] has few positive opportunities to develop social and communication skills, and a sense of belonging to a group of peers his own age.

**Aspect 4. Inappropriate anger management strategies leading to emotional over reactions and aggressive behaviour**

The class teacher reports increasing episodes of aggressive behaviour on Michael's [Brian's] part, including kicking desks, throwing chairs, and running upset out of class,
often in tears. These episodes occur about two times per week. The class teacher is concerned that such episodes "seem to be getting worse", and is worried about the effects on her and the class. An analysis of classroom and playground records indicates the following general patterns:

**Antecedents:** Michael [Brian] usually approaches a small group of pupils, he will try to take something, words are said, and there may be some teasing from the other pupils.

**Behaviour:** Michael [Brian] begins to shout, and swear at the group.

**Consequences:** In the classroom the teacher usually tries to ignore him for as long as possible, tells him off, tells him to return to his seat, or to go to the headteacher. Some of the pupils may verbally retaliate, resulting in Michael [Brian] crying. If in the playground Michael [Brian] is usually brought inside to sit in a classroom.

The class teacher reports that often non-compliance is accompanied by verbal abuse, and increasingly aggression (e.g., slams desk lid down, slams door, kicks chair). Michael's [Brian's] classroom assistant has recently reported to the teacher her concern that "Michael [Brian] seems increasingly unhappy and unsettled". In contrast with these behaviours Michael's [Brian's] mother reports that he helps his older cousin Chris [Richard] out on a local paper round with no reported problems.

*Aspect 5. Low self-efficacy related to self and academic tasks*

The class teacher indicated that when people try to talk with Michael [Brian] he either "clams-up" or tells people that he "can't do it", "I'm useless", or "I don't want to do it". He presents to school staff as "a needy boy who doesn't think much of himself". However, he appears to reject any attempt by adults or other children to talk about things or come close.
Michael [Brian] spends little time on his school work. He usually arrives at school between 9.15 and 9.30 am, two to three times a week, and returns to class late after breaks. He has completed four pieces of work to date in contrast to the average 20 completed by his classmates. A recent observation undertaken by the SENCo of his on-task levels indicated that Michael [Brian] was on-task for only 20% of a one-hour language session. Michael [Brian] tends to ignore teacher instructions. During the one-hour classroom observation he ignored six out of the seven teacher instructions directed at either him or his group.

Aspect 6. Delayed academic attainments
Formal testing by the school indicates that Michael's functioning in basic literacy and numeracy skills is about two years below his chronological age. The class teacher argues that, given the amount of time spent either out of class or off-task, and in view of his difficulties, these results would suggest that "Michael has a good capacity to learn". This impression is confirmed by the headteacher who now often works with Michael [Brian] when he is removed from class. He reported to the class teacher that Michael [Brian] was quick to master new concepts.

Aspect 7. Limited range of behaviour management strategies used by teacher
The class teacher reports that she usually attempts to ignore Michael's [Brian's] inappropriate behaviour until it "gets out of hand", at which point she states she either gives in and attends to him, "even if I'm working with a group, or tell him off, or increasingly I'll send him to the headteacher", as it gives the class and her a break. There do not appear to be any consistent consequences for Michael [Brian] when he is late, or non-compliant, but equally no consistent positives when he is on time, behaving and compliant.

The class teacher acknowledges that the current arrangements are not very productive but reports feeling ill-prepared for the realities of classroom life. She adds that she has got help from the SENCo and headteacher but somehow the translation of
advice from the meeting situation to the classroom lets her down.

Aspect 8. Limited curriculum differentiation by teacher
Michael's [Brian's] teacher did note that at times the curriculum being set for him did not challenge him. But she felt that he needed practice at the "basics" before he could move on. The class teacher currently uses worksheets designed for much younger children, partly to consolidate basic preliminary skills but also to try to "keep him busy".

2. "Describe, with reasons, the most important aspects of the case, and give reasons why others were less important"
The first task would be to check to see if Michael [Brian] was safe at home. If this criterion was satisfied, then it would be relevant to talk with Michael [Brian] to check out adult understandings, find out what he wants, and what he perceives to be happening in his life, before looking at the most important dimensions of the problem, and deciding upon an intervention. Depending upon what Michael [Brian] said, and on the basis of an analysis of the presenting problems described in the previous section, the following six aspects of the case were seen as being most important:

2.1. Child based aspects:

Aspect 3. Limited friendship-making skills with associated lack of positive friendships

Aspect 4. Inappropriate anger management strategies leading to emotional over reactions and aggression

Aspect 5. Low self-efficacy related to self and academic tasks
The three aspects within this group are seen as being inter-connected. However, aspect 4, Michael's [Brian's] emotional over-reactions and associated aggressive behaviour, is seen as being one of the more important aspects of the case for immediate intervention. This is because school staff and peers may be harmed by Michael's [Brian's] increasingly volatile outbursts. From Michael's [Brian's] perspective school is becoming an environment where he cannot engage constructively with either his school work or with peers or adults. It is argued that until his challenging behaviours are more under his control, he will have few opportunities to work on appropriate academic tasks, and to discover satisfactions from his work or from being with other children and adults.

Michael's [Brian's] behaviour can be viewed as being guided by a desire for attention, affection, acceptance and approval. Teaching him more positive ways of getting these core needs met is likely to contribute to a reduction in difficulties within the classroom and playground. It is also likely to have a positive effect on self-efficacy and academic attainments.

Aspect 2.  General health and a history of hearing difficulties
Michael's [Brian's] health, in particular his hearing, needs to be investigated further. It could well be that some of the observed behaviour and learning delays result from frustration due to fluctuating hearing. Fluctuating hearing could also account for some of literacy difficulties (i.e. phonological decoding skills), despite at least an average level of problem-solving and reasoning skills.

2.2. Teacher-based aspects:

Aspect 7. Limited range of behaviour management strategies used by teacher

Aspect 8. Limited curriculum differentiation by teacher

The class teacher's classroom management and curriculum planning are seen as aspects
of the case warranting immediate intervention. It is argued that the teacher is increasingly becoming distressed by her lack of confidence and competence in dealing effectively with these areas.

It would be important for the educational psychologist to assist the teacher in identifying what resources were actually available to her at school (e.g., level of SENCo and headteacher support, release time for teacher, exciting and potential training opportunities, checking out the idea of sharing Michael [Brian] with another experienced staff member for certain lessons during the day). It would be important to encourage the teacher to work on one aspect of her management and organisation at a time, with ongoing practical support (i.e. involving some form of clear plan, with concrete goals and review points). Clearly without the teacher's commitment it is unlikely that any positive change will come out of intervention plans. Indications are that the teacher is motivated to look at her management and organisation, but does not appear to have a framework to process suggestions, and is responding by finding the task daunting and overwhelming.

The following aspects of the case were seen as being relatively less important:

2.3. Home-based aspects:

Aspect 2. Lack of adequate supervision at home
At the moment attempts to intervene at home are seen as having a lower priority because, Mrs Toliver [Hawkins] is either unable or unwilling to co-operate with school or support staff. In designing intervention options however, it is important to recognise that Michael [Brian] appears to have inadequate supervision at home, and may be at risk of physical harm. These areas would need to be monitored, and their importance reappraised at a future point.
2.4. Academic attainments

Aspect 6. Delayed academic attainments

It is argued that until Michael [Brian] can control his emotional over-reactions to frustrating events little progress will be possible. As such a learning programme, on its own, would be secondary to a behaviour management programme, though in practice the learning programme may provide a structured framework for Michael [Brian] to learn new ways of reacting (i.e. concentrating, attending, delaying gratification, receiving positive attention). It is also assumed that within a behaviour management programme there would be elements of social skills training (i.e. Circle of Friends), and experiences designed to develop his self-efficacy.

3. "Identify the possible current factors influencing those aspects you identified as most important"

On the basis of the evidence available it would appear that Michael [Brian] is primarily involved in aversive interactions, and experiences few opportunities for the development of a sense of self-acceptance or positive friendships. At school (and at home), both peers and adults may unwittingly reinforce his aggression, through avoidance, giving in to his threats, behaving like victims or retaliating (verbally and in the future possibly physically), and thus providing unintentional attention. Furthermore, he may have been exposed to numerous models of coping with frustration and life events by over-reacting and being aggressive. It is likely that he may not have acceptable alternative strategies in his current behavioural repertoire, and will require direct teaching and reinforcement of such strategies.

4. "Describe, with reasons, the steps you would take/recommend regarding further assessment or intervention"

On the basis of the evidence so far collected the direct involvement of the educational psychologist would be recommended to the class teacher following the initial interview.
The following steps would be used to guide such future contact:

Step 1. Re-negotiate and contract role

If the class teacher accepts the offer of the educational psychologist's continued involvement, then the EP needs to renegotiate a clear brief and purpose with the teacher. This would include outlining the aspects of the problem upon which they would be initially focusing, explaining rationales, describing what the assessment process would involve (including how effectiveness would be evaluated), and considering how the teacher would be included and how "reporting back" by the EP would be carried out. After discussions with the teacher the brief would be either accepted, modified or rejected. Once agreement had been reached this would become the working brief between the EP and the teacher.

Step 2. Further information collection

On the basis of the information collected from the initial interview the EP has generated tentative hypotheses about the causes of the priority problems, and these would be used to guide further data collection.

(i). Family interview: As part of the process of clarifying the problem situation, it would be recommended that the educational psychologist and the class teacher meet with Mrs Toliver [Hawkins] and the grandmother to obtain their perspectives on the issues causing the school concern, and any issues they might raise. So far the problem analysis has relied very much upon the teacher's perspective. A family interview would provide an opportunity to check out the accuracy of the assumptions and attributions made about Michael [Brian] and his family. This process would be helpful in generating relevant and accurate information upon which to plan any intervention.

It would be appropriate for the educational psychologist and class teacher
to meet before this interview to plan the framework for the meeting (i.e. clarifying what the purpose of the meeting will be, how long it will be, who will chair the meeting, who will take notes, what issues will be raised and why, who will raise them, how will they be raised, how will emotionally difficult issues be responded to).

It would be good practice to regularly review with the family the status of any school-based programme, and to test out any changes noted at home, and to see whether they are willing to try any interventions strategies at home.

(ii). Further assessment of context: As part of the process of clarifying the problem situation it would be recommended that the educational psychologist undertake (with the class teacher's assistance) an assessment of the context. Such an assessment would provide an opportunity for the assumptions and attributions made about Michael's [Brian's] behaviour and responses to be checked out. Equally such an assessment would provide information on peer behaviour and responses, and the efficacy of the teacher's own behaviour and responses.

Before undertaking such an assessment the educational psychologist and class teacher would need to be clear about what the purposes of such an assessment were, what behaviours and processes were being observed and/or assessed, what form the information collected would take, and who would have access to it. These are important considerations, so as to avoid mis-understanding at later points.

Such an assessment could involve classroom and playground observations either using structured or unstructured observation schedules, teacher-kept diaries and/or checklists of their behaviour and the target child and, pencil and paper measures of classroom environment. The idea here is to clarify salient features of the teaching-learning situations where slight modifications to the teacher's responses could be made and tried out, and situations where Michael [Brian] was not perceived as a problem.

Part of assessing the context would involve checking on wider school system issues - in particular, the level of support available to the classroom
teacher from senior management, how external systems (such as the classroom assistant support) assists or hinders the teacher, availability of release and training opportunities.

(iii). **Further assessment by the teacher**: As part of the process of clarifying the problem situation it would be recommended to the teacher, that while the educational psychologist was undertaking their assessments they: checked out how they were responding to Michael [Brian] (e.g., keeping a record of the number of positive, and negative comments made towards Michael [Brian], during the course of a day), reflected upon what goals they wanted to reach, identify specific goals for improving their classroom management and planning. This preparation would be important background work for the feedback and planning meeting with the educational psychologist (and other school staff, such as the SENCo/headteacher).

(iv). **Further assessment of child**: As part of the process of clarifying the problem situation it would be recommended that the educational psychologist undertake an individual child assessment. This assessment would include sampling both his current level of academic attainments (i.e. what particular skills he can and cannot control), as well as more social-emotional aspects (i.e. how he approaches learning tasks, how he makes sense of things).

The idea would be to establish a relationship with Michael [Brian] which would enable him to talk about his attitudes and beliefs concerning himself, his home and school. This would be helpful in clarifying the child's perceptions on some of the areas identified above. It could also provide a useful starting point for involving Michael [Brian] in any subsequent intervention plan. It is important that he knows what is trying to be done. In this way he has opportunities to become increasingly involved in the process, and could choose to work with the adults rather than against them.
Step 3. Clarification of hearing and general state of health issues
It would be recommended to the school, and the family that a full medical examination be undertaken, giving particular attention to hearing difficulties. This appears to have been a long-standing area of concern, and could potentially contribute to our understanding of some of the causes of the Michael's [Brian's] difficulties.

Step 4. Feedback and planning meeting
The psychologist would then feed back to the class teacher the results of their investigations. This would be at a formal review meeting, and adequate time would need to have been planned (e.g., at least one hour). The date of this meeting would have been made when the EP renegotiated their role with the teacher.

Some form of written summary would also be helpful. In the sense that it would highlight themes derived from assessment and observation, the idea being that the information base upon which such themes were identified was clear to both the EP and the teacher.

The feedback meeting would also integrate teacher information collected during the same period (i.e. their observations and reflections of their behaviour and Michael's [Brian's]). The educational psychologist's summary would be seen in this context as a draft working document. Following a joint analysis of all the information collected, the educational psychologist would negotiate with the teacher an acceptable intervention based upon the logic of their joint analysis. This would include a discussion of the factors likely to support and/or hinder their plans (e.g., teacher attitudes and beliefs, teacher's energy level, and goals she wants to achieve, what time is available from the SENCo and the headteacher, as well as any educational psychology issues.

It would be helpful, in terms of providing a record of the meeting, and in clarifying thinking, if a written summary were prepared. This summary would need to specify what was going to happen, and why, by when, and by whom,
detailing any additional resources needed, and specifying how the intervention was going to be monitored and evaluated. A review date(s) would also be scheduled in.
APPENDIX THREE

MATERIAL RELATED TO STUDY TWO (A)

Questionnaire A  Neo Five-factor Personality Inventory (Big-Five)

Questionnaire B  Norton Communication Style Measure (CSM)
QUESTIONNAIRE A
(NEO FIVE-FACTOR INVENTORY - FORM S)
Paul T Costa, Jr, PhD, Robert R McGrne, PhD

1. I am not a worrier.
2. I like to have a lot of people around me.
3. I don't like to waste my time daydreaming.
4. I try to be courteous to everyone I meet.
5. I keep my belongings clean and neat.
6. I often feel inferior to others.
7. I laugh easily.
8. Once I find the right way to do something, I stick to it.
9. I often get into arguments with my family and co-workers.
10. I'm pretty good about pacing myself so as to get things done on time.
11. When I'm under a great deal of stress, sometimes I feel like I'm going to pieces.
12. I don't consider myself especially "light-hearted".
13. I am intrigued by the patterns I find in art and nature.
14. Some people think I'm selfish and egotistical.
15. I am not a very methodical person.
16. I rarely feel lonely or blue.
17. I really enjoy talking to people.
18. I believe letting students hear controversial speakers can only confuse and mislead them.
19. I would rather co-operate with others than compete with them.
20. I try to perform all the tasks assigned to me conscientiously.
21. I often feel tense and jittery.
22. I like to be where the action is.
23. Poetry has little or no effect on me.
24. I tend to be cynical and sceptical of others' intentions.
25. I have a clear set of goals and work toward them in an orderly fashion.
26. Sometimes I feel completely worthless.
27. I usually prefer to do things alone.
28. I often try new and foreign foods.
29. I believe that most people will take advantage of you if you let them.
30. I waste a lot of time before settling down to work.
31 I rarely feel fearful or anxious.
32 I often feel as if I'm bursting with energy.
33 I seldom notice the moods or feelings that different environments produce.
34 Most people I know like me.
35 I work hard to accomplish my goals.
36 I often get angry at the way people treat me.
37 I am a cheerful, high-spirited person.
38 I believe we should look to our religious authorities for decisions on moral issues.
39 Some people think of me as cold and calculating.
40 When I make a commitment, I can always be counted on to follow through.
41 Too often, when things go wrong, I get discouraged and feel like giving up.
42 I am not a cheerful optimist.
43 Sometimes when I am reading poetry or looking at a work of art, I feel a chill or a wave of excitement.
44 I'm hard-headed and tough-minded in my attitudes.
45 Sometimes I'm not as dependable or as reliable as I should be.
46 I am seldom sad or depressed.
47 My life is fast paced.
48 I have little interest in speculating on the nature of the universe or the human condition.
49 I generally try to be thoughtful and considerate.
50 I am a productive person who always gets the job done.
51 I often feel helpless and want someone else to solve my problems.
52 I am a very active person.
53 I have a lot of intellectual curiosity.
54 If I don't like people, I let them know it.
55 I never seem to be able to get organised.
56 At times I have been so ashamed I just wanted to hide.
57 I would rather go my own way than be a leader of others.
58 I often enjoy playing with theories or abstract ideas.
59 If necessary, I am willing to manipulate people to get what I want.
60 I strive for excellence in everything I do.

FOR OFFICE USE ONLY

Thank you for completing this questionnaire.
(NORTON COMMUNICATION STYLE MEASURE
SHORT FORM - NCSM-SF)

People differ in the way that they communicate. In this questionnaire we would like you to indicate how well each of the following statements describes the way that you communicate.

1. I am an extremely friendly communicator.
2. In most social situations I generally speak very frequently.
3. I actively use facial expressions when I communicate.
4. What I say usually leaves an impression on people.
5. I have a tendency to dominate informal conversations with other people.
6. Most of the time I tend to be very encouraging to people.
7. As a rule I am very calm and collected when I talk.
8. I very frequently verbally exaggerate to emphasise a point.
9. I always show that I am very empathetic with people.
10. Under pressure I come across as a relaxed speaker.
11. When I disagree with somebody I am very quick to challenge them.
12. I tend constantly to gesture when I communicate.
13. The way I say something usually leaves an impression on people.
15. I am an extremely open communicator.
16. I leave a definite impression on people.
17. I am very argumentative.
18. My eyes tend to reflect to a very great degree exactly what I am feeling when I communicate.

Taken overall, how do you think your communicative ability compares with other people?

1. People as a whole of your age.
2. Teachers (or EPITs) in general of your age.
3. Teachers (or EPITs) of your own age and experience.

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E = □  D = □  NV = □

Thank you for completing this questionnaire.
## APPENDIX FOUR

### MATERIAL RELATED TO STUDY THREE

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LETTER ONE: Covering letter to training course tutors

Semi structured interview study

Further to our recent telephone (e-mail) conversations thank you very much for agreeing to be involved in this interview study. As I mentioned I have now collated the results of the national survey of course tutors views on interviewing and problem solving, have completed analysing the results of a longitudinal study on the development of problem understanding during initial teacher interviews, in a group of EPITs, and have compiled the results of two additional studies looking at the relationship of personality and communication style and the development of hypotheses.

The results of these studies pose some interesting questions which I felt warranted further exploration via a series of in depth interviews with a sample of course tutors who took part in the national survey. You are one of six course tutors I will be interviewing to explore your insights, views and reactions to aspects of my research. The interview will be based on a semi structured interview guide and takes about one hour to complete. Your views and reactions are important to me and strict confidentiality is assured. I really appreciate your positive reaction to being involved, and hope that the information collected will also be of value to not only yourselves but to all those involved in training educational psychologists in the United Kingdom.

Interview arrangements:
Your interview slot is scheduled for the: / /2000, at am/pm, at . If you have any queries, please do not hesitate to contact me.

Finally, thanks again, and I look forward to meeting and talking with you.

Yours sincerely

Jeremy Monsen
Researcher
SEMI-STRUCTURED INTERVIEW PROFORMA

PRIVATE AND CONFIDENTIAL

GAUGING COURSE TUTORS REACTIONS TO MAIN THESIS FINDINGS

Date: ________________________________
Interviewer: ____________________________
Interviewee: ____________________________
Time: ________________________________
Location: ______________________________
Code: (001/ 002/ 003/ 004/ 005/ 006)

NOTES: (Keep note taking to a minimum however record significant thoughts and reactions to what interviewee is saying)
PHASE ONE: Rapport building, introduction, purpose and confidentiality

_Summary:_
- Set up and test tape recorder _before_ the start of the interview

**Start the tape recorder**

1. **Welcome interviewee, introduce yourself and check on time available**

2. **Introductory statement (it is permissible to adlib around the scripted text)**

- "Thank you very much for agreeing to be interviewed by me today. The covering letter and our recent conversations outlined in general terms why I wanted to interview you. It is my understanding that we had agreed on about 1 hour for this interview. Is that still all right?

- The purpose of this interview is to obtain information from you that will help me understand aspects of my recent research better. As someone who has been involved in teaching EPITs (or using) interviewing and/or problem solving skills you are in a unique position to offer me your reactions, views, thoughts, insights and reflections on some of the results of my recent research.

- The responses from all the people I interview, and I'm interviewing about 5 people, will be used anonymously in the final write up. Nothing you say will ever be identified with you personally. As we go through the interview, if you have any questions about why I'm asking something, please feel free to ask. Or if there's anything you don't want to answer, just say so. It would be most helpful to me if you could give comprehensive responses to the questions so I can build up a rich set of
Finally I want to stress that the purpose of this interview is to get your reactions, views and insights to some of the main findings from my recent series of research studies. There are no right or wrong answers and I'm genuinely interested to find out what you truly think. Before we start have you any questions or queries?"
NOTES: Phase one
PHASE TWO: Background introduction

"This first set of questions asks about your background and experience. The purpose of these questions is to help me build up a profile of the people I interview."

Probes: ask follow up questions for clarity and expansion.

1. "How long have you been a course tutor?"

2. "Do you also work for a Local Education Authority?" (Probes: ask in what capacity and for what amount of time)

3. "How long have you been involved in teaching interviewing and/or problem solving skills to EPITs?"
NOTES: Phase two
PHASE THREE: Reflections on study one

"The next set of questions is focused upon some of the main findings from a postal questionnaire survey of course tutors' views on aspects of interviewing and problem solving".

Probes: ask follow up questions for clarity and expansion.

1. All the course tutors surveyed reported that they taught a hypothesis-testing framework to their EPITs to guide problem solving.

1a. "What does "hypothesis-testing" mean to you?"

1b. "How is the teaching of a hypothesis testing framework approached on your course?"

2. The results highlighted that 85% (11/13) of course tutors said that they taught their EPITs to share their thinking out loud with clients during initial interviews.

2a. "What does this finding mean to you?"

2b. "How is this teaching approached on your course?"
NOTES: Phase three
"The next group of questions looks at the main findings from a study which investigated
the relationship between selected interviewer behaviours (open questions, closed
questions, number of utterances and accessible reasoning), and problem understanding
in a longitudinal experimental study of ten EPITs, and eight teachers who acted as
controls.

For research purposes an interviewer's reasoning was coded as being accessible if the
interviewer's interpretations or evaluations of the information disclosed to them by the
teacher were done in a way which enabled the teacher to confirm them, or to challenge
them (i.e. in other words the interviewer says what he or she thinks, with the reasoning
behind it and checks it out with the teacher).

The results showed that, following training, EPIT use of accessible reasoning
significantly increased during initial interviews, and was associated with "higher quality"
written analyses of the teacher's presenting problem".

Probes: ask follow up questions for clarity and expansion.

1. "What are your first reactions to the finding about the role that accessible
   reasoning may play in the development of problem understanding?"

1a. "If this finding is valid, how do you think it can be explained? I.e. have you any
    ideas about why accessible reasoning might be important for the development of
    high quality problem understanding?"
1b. "What are some of the possible implications of this finding for training courses for educational psychologists?"
NOTES: Phase four
PHASE FIVE: Reflections on study two (a)

"The next group of questions is focused upon some of the main findings from research which explored whether interviewer personality characteristics (i.e. neuroticism, extroversion, openness, agreeableness, conscientiousness) and features of their communication style (i.e. effective, dominant and non-verbal) contributed anything to our knowledge of the processes involved in formulating a "high quality" understanding. The results suggested that these aspects were not associated with the quality of interviewers' problem understanding, or their use of different interview strategies".

**Probes: ask follow up questions for clarity and expansion.**

1. *What are your reactions to this finding?*

2. "An interesting secondary finding was that at the end of training the EPIT group were significantly more neurotic than the control group. The weakness with this finding is that we did not have any before training measures".

2a. *"What does this finding mean to you?"*
NOTES: Phase five
PHASE SIX: Reflections on Study Two (b)

"The next group of questions is focused upon some of the main findings from research which investigated whether training had an impact upon the number and type of hypotheses EPITs used to attribute causal relationships to aspects of the teacher's problem situation. Results showed that there were no significant changes in the number of hypotheses offered by either EPITs or controls. However, when the hypotheses were categorised, for example into those focused on the individual child, those focused on the learning environment and those focused on interactions between the two, I found that by the end of training EPITs were significantly more likely than controls to use interactional hypotheses to attribute cause when integrating aspects of the teacher's problem situation".

 Probe: ask follow up questions for clarity and expansion.

1. "What are your first reactions to these findings?"
NOTES: Phase six
PHASE SEVEN: Closure

"Finally thank you very much for giving up your time and letting me interview you. Your comments and insights have been particularly interesting and illuminating. Before we finish though have you any final comments or questions you want to ask".

Turn tape recorder off

Say goodbye and thank interviewee
FINAL SUMMING UP
GUIDANCE NOTES ON MAKING HIGH QUALITY TAPE RECORDINGS

1. Equipment

• Use an electrical outlet and outside mike whenever possible.

• If you use batteries check them before going to the interview.

• The recorder should be clean and in good condition - check functions before going to the interview.

• Take along extra tape cassettes, mike and batteries.

• If possible have a back up recorder. This is especially important if the interview is to be undertaken away from your usual base.

2. Before the interview

• Choose a place that is quiet and free from interruptions.

• Place an "Interview In Progress" sign on the outside of the door.

• Place microphone about half way between the interviewer and interviewee; making sure via a test run that both can be heard clearly with normal speaking voices.

• Set the recorder on a stable surface and where it can be easily monitored and controlled.
3. **During the interview**

- Speak clearly and not too fast - the interviewee is likely to do the same.

- Ask interviewee to speak clearly.

- Make a short test with the interviewee: then rewind and listen so the interviewee can hear whether he or she is speaking distinctly; if not, say, "The recorder does not seem to be picking up well. Could you speak up a little? Whether the problem is mechanical or personal, correct it before continuing.

- Do not rustle papers, cups, bottles, and so on near the mike.

- Turn off recorder during irrelevant discussion.

- Watch for tape breakages and the need to turn the tape over.

- Follow all cassette recorder instructions.

- Repeat pre-test if tape change is necessary.

- At the end of the interview, say "This is the end of the interview with ____".

4. **After the interview**

- Listen to the tape - make notes as necessary, list proper names and unfamiliar terminology to assist the work of the transcriber.

- Label tapes with date and research codes and return them to the appropriate
- Keep tapes and recorder in good condition - do not touch tape or expose it to extreme temperatures.

- Keep tapes safe.

*Adapted from Patton (1990, pp.350-351)*
GUIDANCE NOTES ON ETHICAL CONSIDERATIONS FOR INTERVIEWING

1. Promises and reciprocity

• What are the benefits to the interviewee for being involved in your research?

• Why should the interviewee participate in the interview?

• Avoid making promises lightly; such as promising a copy of the results or the report.

• If you make promises it is important to keep them.

2. Risk assessment

• In what ways (if any) will conducting the interview put people at risk? (i.e. psychological stress, legal liabilities, ostracism by peers, course staff or others for having talked, political repercussions).

• How will you handle these potential risks?

3. Confidentiality

• What are reasonable promises of confidentiality that can be fully honoured?

• How important is it that the interviewee remains anonymous?

• Who will have access to the interview tapes and transcripts?
• How can the identity of the interviewee be disguised?

• Can any legal problems concerning protection of the interviewee be expected?

• You need to think carefully in advance about how data will be analysed, stored and reported.

4. **Informed consent**

• What kind of informed consent (if any) is necessary for mutual protection?

• Should informed consent be agreed on orally or should there be a written contract?

• Who should give the consent - the interviewee or their line manager?

• How much information about the study needs to be given in advance, and what information can wait until a debriefing after the interview?

• How can informed consent be handled in exploratory studies where investigators themselves will have little advance knowledge of how the interviews will proceed?

5. **Data access and ownership**

• Who will have access to the data, and for what purposes?

• Who will own the data in an evaluation study?
• Be clear about these issues in any contract you set up.

6. **Interviewee's mental health**

• How will interviewee's be affected by being interviewed?

• What will they hear or see that may merit debriefing and processing?

• Will the potential harm to the interviewee be outweighed by potential benefits?

• Will the interviews touch on therapeutic issues, and if so, what precautions can be taken?

• When publishing the study, what consequences can be anticipated for the interviewee and for the groups they represent?

7. **Researcher (interviewer) supervision**

• Who will be the researcher's (interviewer's) supervisor during the study?

• Not all issues can be anticipated in advance. Knowing who you will go to in the event of difficulties can save time and avoid unnecessary stress.

• How can the researcher ensure the scientific quality of the study and protect the independence of the research?

• How can the researcher avoid or counteract over identification with his or her interviewees', thereby losing critical perspective on the knowledge obtained?

*Adapted from Kvale (1996, pp.119-120) and Patton (1990, pp.356-357)*