

**AN EXPLORATION OF QUESTIONING IN TUTORIAL
INTERACTIONS**

Joanne Hardman

UNIVERSITY OF NATAL

DURBAN

FACULTY OF COMMUNITY AND DEVELOPMENT DISCIPLINES

SCHOOL OF ANTHROPOLOGY AND PSYCHOLOGY

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AN EXPLORATION OF QUESTIONING IN TUTORIAL INTERACTIONS

by

Joanne Hardman

SUPERVISOR: J. BRADBURY

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ABSTRACT

Access to the textual world of academia requires that learners are familiar with the critical open-ended questioning stance demanded by textuality. Questioning is one of the most important learning-teaching tools available to both learner and educator. Due to the crucial role questioning plays in knowledge construction in the university, this study focuses on questioning strategies used by tutors and learners during tutorial interactions. This focus on questioning aims to: 1) Identify common **learner** question and response strategies across tutorials, ascertaining what kinds of questions learners ask in help-sessions and what kind of responses tutors' questions elicit from learners, 2) identify common question and response strategies employed by **tutors**, ascertaining which strategies facilitate active learning, with a particular focus on the kinds of questions used to provoke (open) or inhibit (close) learning and 3) compare the questioning strategies of tutors and learners, uncovering different epistemic bases informing their engagement with text. This study adopts a developmental-process approach to research. Two basic premises informing this research follow from this particular developmental approach: 1) an awareness of learning as a process of change and 2) an appreciation of the socio-historical and discursively constructed nature of cognitive processes.

It was found that learners and tutors appear to ask the same types of questions regarding the content of the course with both groups primarily asking closed questions. Qualitative analysis, however, indicated that tutors and learners use these types of questions in very different ways. While tutors' ask open questions in order to provoke enquiry, indicating their reliance on a critical questioning epistemology, learners' borrow open questions from various sources, indicating only that they can imitate the kinds of questions that characterise academia, without evidencing a questioning stance to knowledge construction. Similarly, while tutors' ask closed

questions in order to initiate a narrative line of enquiry, learners' asked closed questions in order to elicit a closed response. Further, learners' made no use of process type questions and responses, such as metacognitive and group cohesion questions and responses. Consequently, one may conclude that tutors' use of these types of questions and responses indicated that they control the tutorial process. Further this finding indicated that learners need this kind of structured guidance. The study concludes that tutors and learners use ostensibly similar questioning strategies in very different ways, indicating different epistemic bases informing their engagement with the textual task of academic study.

1. INTRODUCTION

1.1. Elucidating the context

The transition from a society predicated on the segregationist ideals of Apartheid to a democratic society has had a tremendous impact on all areas of South African life. Democratisation of society has brought with it a call for transformation in higher learning institutions. Consequently, universities are having to rise to the challenge of effectively meeting the needs of large numbers of heterogeneous learners by developing curricula that reflect their unique South African heritage without ignoring the invaluable contribution to contemporary thought provided by traditional Western epistemologies. Moreover, the disadvantaged education that was historically forced on Black African learners in South Africa means that many learners embarking on their university careers are underprepared for the kinds of tasks facing them at university. International calls for world wide equity in access to higher education and national demands to redress past inequity (outlined in the governments' Education White Paper 3, 1997) require that universities rise to the challenge of transformation. It is in this context of social transformation that conventional fields of university teaching and learning are being called on to change.

The need for transformation is clear, but exactly what must change is often debated. Should universities change their curricula to accommodate the needs of a diverse student body or should learners' change? Clearly, 'transformation' contains within it both an emphasis on fostering the kinds of cognitive abilities required by learners to engage with university tasks, as well as the necessity of altering existing curricula to reflect the University's African context. So, universities must meet the challenge of democratisation in education, facilitating equitable access to tertiary learning institutions for those who have been previously excluded as well as implementing models of learning and teaching that are sensitive to the differing learning needs of heterogeneous learners. Internationally, the call for education to be

open to all as a basic human right, has led to a serious debate based on the equitable and efficient allocation of educational resources (NADEOSA, 1997; SAIDE, 1999). The crux of the matter is how to guarantee equal access to higher learning to all in a cost-effective way. Limited educational, financial and human resources in South Africa intensify the need to efficiently ensure open access to those learners who want to study further. Given large numbers of learners, with vastly disparate educational backgrounds, how can South African universities rise to the challenge of providing equal access to quality education for all while at the same time meeting the needs expressed by different educational backgrounds efficiently? Put simply, how can South African universities ensure equal access to tertiary education for learners who want to study further? In South Africa, where educational resources are limited, both in terms of finance and manpower, distance education may provide a promising means for meeting these challenges (NCSNET & NCESS¹, 1997). However, if a distance education programme is going to be successful, it must be able to meet the different educational needs of learners, appreciating that different learners will require different types of educational assistance.

1.2. Underpreparedness as a problem demanding a solution

The term 'underprepared' has historically emerged from debates in academic support circles in South African universities to refer to a particular type of learner whose disadvantaged educational background impedes their engagement with university tasks. In recent decades the term has been mobilised in various fields from education to psychology. As with most ideas gaining currency, this has led to a lack of semantic clarity, with various definitions of underpreparedness emerging from debates in academic support circles. Therefore, to facilitate clarity and avoid any misunderstandings, in the context of this research (or to borrow from Wittgenstein

¹ National Commission on Special Needs in Education and Training (NCSNET): National Committee for Education Support Services (NCESS), 1997.

1958, within this 'language game'), this term will be employed to refer to those learners whose epistemic assumptions are inappropriate for dealing with specific, textually embedded university task demands (Bradbury & Griesel, 1994). Further, disadvantaged educational backgrounds have impacted the nature of these learners' early mediated learning experiences (Feuerstein, 1980). Therefore, inappropriate or inadequate mediation has led to the under development of these learners' cognitive functions. Consequently, underprepared learners are unable to appreciate what university tasks demand or what mental actions are required to solve the kinds of examination questions they encounter at university. The term 'underprepared' does not adequately highlight the fact that such learners may in fact be relying on entrenched, familiar ways of knowing (what Vygotsky (1978) calls fossilised behaviour) hindering their abilities to approach university tasks in appropriate ways. That is, these learners rely too heavily on inappropriate epistemologies, leading them to misunderstand university tasks. There is then, a disjuncture between what learners bring to university tasks and what these tasks demand. Clearly, these learners not only need to learn new ways of understanding but also to unlearn, or relinquish their inappropriate 'ways of knowing' in order to learn new ways of approaching university ways of knowing (Miller, 1989b).

Given that the relationship between the individual and the social is one of mutual construction and change, we can not locate the problem of underpreparedness at either an individual or social level (Bradbury, 1995). Rather, intervention needs to take place in the point of action between the two. A first step in providing access to university ways of knowing for these underprepared learners must entail an understanding of the kinds of epistemic assumptions they bring to university tasks, ascertaining the differences between their epistemic assumptions and those required by university study. Unravelling the epistemic assumptions of university tasks, so taken-for-granted that they have become automated, will provide learners with better

access to these ways of knowing. It must be noted that although universities may be particularly sensitive to meeting the needs of historically disadvantaged learners, all learners (whatever their particular level of cognitive processing) entering university for the first time can benefit from the explication of university task demands implied in providing greater access to all.

1.3 Models for Mediation: Learner support past and present

Traditionally, learner support programmes occupied a marginal place within universities, acting predominantly to help relatively small numbers of black African learners engage with university tasks. Interventions predominantly took the form of supplementary tutorials, where the tutors taught lecture material to learners. In addition, the selection of students with potential was a key focus in programmes like the Teach-Test-Teach (TTT) programme (Bradbury & Griesel, 1994) run by a team of educators from the University of Natal, Durban. Drawing on Feuerstein's (1980) conception of inadequate mediated learning experiences resulting in underdeveloped cognitive functions, this approach accepted that where prior learning opportunities were inadequate to facilitate engagement with university tasks, the only method of selection appropriate in such situations was to teach learners before testing. Further, with its basis in Vygotsky's (1978) notion of the Zone of Proximal Development as that area of directed activity, where the learner acts with the aid of an other to solve problems s/he is unable to solve independently, this method of selection entailed ongoing educational intervention, throughout the first year of university, in order to consolidate potential academic ability. Programmes like the TTT successfully demonstrated that learners from educationally disadvantaged backgrounds could indeed engage effectively with university tasks, provided the learning-teaching context mediated their access into this textually based system of knowledge (Bradbury, 1995). The work carried out by educators on the TTT programme pointed out that 'underpreparedness' was a problem, which demanded a solution.

Democratisation and the consequent calls for transformation in higher education, has brought this issue into focus. In its bid to redress the inequalities of the past, the government has called on all levels of education to transform. Access to higher education for all South Africans requires that the university not only develop curricula to reflect a diverse learner body, but also that learning-teaching contexts, specifically equipped to meet the needs of underprepared learners, be developed. In order to meet this challenge efficiently, the Psychology department at the University of Natal has developed a learner support programme that incorporates both academic and counselling support. The aim of this programme is to empower all learners, irrespective of their level of cognitive processing, to become self-regulating learners.

1.3.1. Developing the future: a foundation for learner support

This research project was conducted on the assumption that learners can and do change. In fact, the very concept of *learning* must imply change. The theoretical foundation informing this assumption is the notion that when two different systems of knowledge meet (learners' epistemology encountering a completely different university epistemology), the resultant conflict provides the basis for transformation, in which learners as well as the university change (Craig, 1989, 1991; Bradbury & Griesel, 1994; Bradbury, 1997). Further, this framework assumes that such transformation, where cognitive operations undergo change, cannot be taught without activity on the part of the learner. That is, "action must precede understanding" (Miller, 1994). The assumption that learners can change is largely predicated on the Vygotskian conceptualisation of development as being socio-historical. Vygotsky conceptualises the Zone of Proximal Development as

The distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers (Vygotsky, 1978: 90).

It is within the zone of proximal development that mediation effects change; it is here that teachers/tutors/more experienced peers can exert some influence on the learner's future. It is accepted therefore, that educational intervention provides opportunities for learning. The Vygotskian concept of **mediation** (or regulation by an other) as opposed to conventional teaching methods premised on the assumption that knowledge can be directly transferred from teacher to learner, is central in bridging the gap between different learning histories. This understanding of mediation informs the specific focus on questioning in this research. The question posed by the learner provides the tutor with a sample of that learner's knowledge, indicating sites for future intervention in the learners' ZPD. For the learner, the tutor's answer to his/her question can aid the learner to solve the problem encountered, facilitating learning. So, in a dialogical interaction, a learner's question can lead to understanding for the learner, and point to gaps in the learner's knowledge, suggesting areas for future assistance. The tutor's question is posed for a different reason to the learner's. Whereas the learner's question seeks help to solve a problem that s/he can't solve on her/his own, the tutor's question seeks to provoke disequilibrium in the learner, shifting her/him from familiar to unfamiliar knowledge, inviting learners to act in new ways. In the tutorial interaction the tutor provides assistance, mediating learners' access to written text through dialogue. This tutorial assistance is necessary given the 'mixed mode' nature of the Psychology 1A course. That is, in order to open access for learners who want to study further, this course makes use of written texts, lectures and tutorial help-sessions to teach the course material. To ensure flexibility, the written text is structured in such a way that learners do not necessarily need to attend lectures or help-sessions in order to engage with the material. Hence, the written text itself is designed to mediate learners' access to academic enquiry.

1.4. 'Mixed mode' education in South Africa: Ensuring Equity and Efficiency

Particularly in South Africa, where learners are widely dispersed and educational resources are scarce, distance education has been proposed as a means for providing access to higher education. Internationally, distance education provides access to higher education by means of predominantly technological media, such as computers, the Internet, videos and television for example. Learners are required to actively search for information, sharing their findings electronically with other learners and instructors. In this way, learners develop new modes of communicating and co-operating across geographical boundaries (Rumble, 1989). Moreover, the very nature of distance education, especially in technologically advanced societies, means that learners can learn at their own pace, selecting their educational interactions to reflect common levels of understanding as opposed to traditional schools where educational interactions were between peers of the same age, but not necessarily of the same educational level. Clearly, in technologically advanced societies, distance education provides exciting possibilities for teaching and learning. Technologically, however, South Africa lags behind such countries. How then can distance education provide access to education for all in South Africa? Moreover, as most distance courses continue to rely heavily on print media for teaching purposes, what of those underprepared learners whose educational opportunities have severely limited their ability to engage with textually based knowledge; how can distance education meet their very specific needs?

International trends towards open universities (where 'open' refers to educational access) have led increasingly to the convergence of distance education and conventional education (Rumble, 1989,1990). Therefore, although strongly debated, the differences between 'open learning ' and 'distance learning' are not complete. 'Open learning' refers very basically to increasing access to education, by removing barriers such as for example, age limits, specific qualification requirements and even

removing timetabling restraints. 'Open learning', then, could conceivably enable those who want to study further to attend university (Rumble, 1989). 'Distance learning' refers very specifically to a mode of educational delivery that essentially does not require the presence of a teacher to facilitate learning (Rumble, 1989). Universities may be both 'open', providing flexible access to education, and rely on distance education as a mode of delivery. This trend is reflected in South African universities developing courses that are becoming increasingly resource-based, with texts constructed in ways that facilitate independent study, allowing mass access and flexibility. The role of lecturer and/or tutor then becomes more geared towards facilitating learning from these resources. Unlike traditional correspondence style courses, distance education courses specifically include learner support ensuring that the tutor/lecturer has more contact with the learner. Given the unifying trend in distance and conventional education, a course may well be structured as a distance learning course (in which it is essentially the course material that 'teaches', rather than a teacher), having course material structured as a teaching tool and also use resource based learning. The Psychology IA course at the University of Natal, Durban, is run in this way, with learners receiving a combination of resource based learning and interactive tutorials. SAQA ² refers to this as 'mixed mode education'. The course is designed in such a way that it includes module texts (learning materials that specifically model for learners how to approach reading and writing in the absence of a teacher), learner support programmes (in the form of academic support provided by tutors in help-sessions) and continuous assessment of learners. By using mixed mode education, then, the psychology department of the University of Natal, Durban, aims to provide greater access to its first year course, efficiently. Moreover, with its focus on learner support, this course specifically addresses the needs of underprepared learners, mediating their entry into the university. Therefore, where learners are unfamiliar with the demands of textuality, their access to the

² South African Qualifications Authority Act (1997).

textual world of academia is mediated in help-sessions by tutors. Tutors', who are familiar with the demands of academic enquiry are able to explicitly unravel these demands for learners during help-sessions. The tutors' dialogue, then, re-creates the text for learners, remodelling it in ways that are capable of mediating learners' access to it.

1.5. Help-sessions: the context for mediation

Craig (1989) notes that tutorials provide a possible tool in which learners can explore the epistemic assumptions underlying university epistemologies with the assistance of tutors. In so far as tutorials are spaces in which learning and teaching of new understandings shifts prior inadequate understanding, they may be viewed as mediational opportunities (Miller, 1994). Tutorial interactions in the form of help sessions run daily, and workshops run monthly, by the Psychology Department of the University of Natal, Durban, provide the interactive mediational context for this study. The premise underlying these help-sessions is that effective mediation can develop learners' potential. This is especially relevant in relation to underprepared learners whose underdeveloped cognitive functions require mediational opportunities to change (Feuerstein, 1980). Craig (1989) suggests that where cognition has not developed to the level appropriate to meet university demands, the form of this knowledge should be imposed by tutors/lecturers on the content of the tasks that learners meet at university. In order to mediate effectively in this learning-teaching context, a 'scaffolding'³ process is utilised by tutors (Wood, Bruner & Ross, 1976). The first (and perhaps obvious) step in this process is to recruit the learners, securing their active engagement with the task. To this end, learners are required to bring their own questions to the sessions. These questions initiate the interaction between tutor and learner(s). The 'moves' for answering questions are clearly set out (both in

³ It is interesting to note that Wood et al's (1976) usage of the 'scaffolding' metaphor is anticipated in Luria and Vygotsky's (1976; 1986/1930a) discussion on cultural instruction.

written tasks, in terms of task feedback, and by tutors) to facilitate learner solutions. This, in effect, simplifies the task demands for the learner, modelling for him/her how to answer task questions. The tutor maintains the direction of the questioning, making sure that the objective of the session is pursued. Tutors also maintain the direction of the problem-solving situation by allowing the learner the freedom to 'risk' asking further questions, in the pursuit of their goal. Pointing out important or critical features of the task highlights any discrepancies between the learners' answer and the correct answer. The tutor's aim when highlighting these discrepancies is not to discourage learners but to help them interpret these discrepancies. These discrepancies, treated as steps towards successful completion of a task, become learning opportunities for students. Treating errors as moves towards success alleviates some of the frustration felt by learners who are struggling to solve problems. This requires that the tutor deals with errors in a 'face saving', as opposed to threatening way (Wood et al. 1976). Finally, in assisting the learner to solve a problem the tutor may demonstrate or model the correct actions required to solve the problem. Help-sessions then are aimed at providing learners with mediational opportunities.

As a support programme for learners, these help sessions are learner-driven interactions, with learners encouraged to provide the questions guiding the interaction. With the focus on learner-driven interaction, the tutor's role is to guide learners' engagement with the materials of the course. It is this interactive process of learning, where both tutor and learner together construct new ways of knowing, which provides the context for this research. Given that the interactions take place within a 'classroom', learners bring to the situation a certain pre-conceived understanding about how to act, premised on their actions in schoolrooms. Generally, this results in learners quietly writing down whatever the tutor (identified by learners as a teacher) says. Given our premise that action must precede

understanding, and that teaching can not simply be the transfer of information from one head to another, clearly this mode of interacting needs to be immediately challenged (Moll & Slonimsky, 1989). To this end, learners are required to write down questions, relating to the current module text, and to bring these questions to help-sessions. These learner-generated questions drive the interactions during the help sessions. As learner support, the help sessions provide learners with the opportunity to approach a tutor regarding material covered throughout the course. Tutors, trained to facilitate learners' active understanding of tasks by giving constructive feedback to assignments, then, provide academic support. Direct interventions into linguistic difficulties and underpreparedness, aims to ensure that all learners are able to effectively access the course material. Given the lack of financial resources within the university generally, a relatively large base of (part-time) tutors provides for a daily quality service to learners in a cost-effective manner. Although the help sessions are not compulsory, learners are encouraged to attend the sessions as frequently as possible. As only two lectures are given weekly on course content, these help-sessions provide the learners with help daily. Learner support, then, plays a vital role in guiding learners through their Psychology IA course.

The possibilities, however, for guiding learners' action are not limited to help-sessions. To facilitate learners' active reading, the module texts for Psychology IA are written in such a way that the text itself becomes a mediator. The tasks related to each module text further provoke a certain kind of reading from the student, an active critical stance as opposed to a passive acquiescent one. Written feedback⁴ to the tasks provide a model for learners, both in terms of what a good answer should look like as well as modelling how (what cognitive 'moves' are required) one gets to a good answer. Learners are shown how to select evidence for their claims; how to

⁴ Note this specifically refers to written feedback to the tasks that learners are required to do. Of course verbal feedback in help-sessions also serves to guide learners actions.

weigh up various theories and eventually choose the theory which has the most support. The Psychology IA course, therefore, has various sources of mediation that model the mental processes involved in university task engagement, providing a scaffolding for learners' metacognitive control; help-sessions in which tutors can directly interact with learners, guiding and monitoring their action; module texts which provide guides for reading; module tasks providing guides for writing acceptable answers; and finally, feedback to the tasks which models for the student how to answer the particular question(s) and explains common misunderstandings, explicitly unravelling the epistemic assumptions underlying the task.

If we accept that educational intervention can transform learners, creating opportunities for them to engage with university tasks, we are able to appreciate underpreparedness as a problem, which can indeed be solved. The concept of mediation informing learning-teaching strategies employed in the Psychology IA help-sessions can be briefly condensed into the following fundamental points (Bradbury & Griesel, 1994):

1. This framework accepts that all people are capable of logico-mathematical thought from adolescence onwards. The focus here, then, is on universal competencies, as opposed to the testing paradigm's focus on differences. However, it is accepted that the development of such competencies is largely dependent on learning opportunities. Where learners have not had such learning opportunities, clearly they will not have had the opportunities to fully develop their abilities (Craig, 1991; Miller, 1984, 1989a). The learning-teaching context must be able to guide these underprepared learners' engagement with the tasks. To this end, the help-sessions run by the Department of Psychology at the University of Natal, Durban, serve as 'spaces' for mediated action.

2. This framework accepts that the very different learning histories of different learners will equip them with competencies suitable to a greater or lesser degree to the problem solving situations encountered at university.
3. All people have the ability to change, the degree to which they do so however, depends largely on the disequilibrium provoked between the person and the available resources for overcoming the conflict. What learners bring to the task and what the task demands may differ incredibly. It is at this moment, faced with an 'incomplete' (in the sense of not knowing how to approach the task) base from which to generate active engagement with the task, that the student may feel confused, or in conflict (Piaget, 1977). It is here that the space is created for asking questions, provoking learning (Dillon, 1988).

1.6. Rationale: the case for focusing on questioning:

Observations of young children's problem solving led Luria (1976) and Vygotsky (1978) to conclude that speech played a significant role in assisting young children to regulate their problem solving behaviour. One way in which children can use external speech to solve problems is to ask an adult how to accomplish their goal; that is, to ask questions. External questions, directed to adults or teachers, assist the child in regulating the kinds of actions required to solve particular problems. So, questioning is one of the basic techniques used to enquire about and generate understanding of one's surroundings; it is also a means with which to regulate behaviour. When faced with something unfamiliar, something that 'doesn't fit' with his/her current knowledge, the resultant feeling of 'perplexity' enables the child to ask questions, to add to his/her knowledge; to learn (Dillon, 1988). In this sense, questioning actually implies a certain pre-understanding, that is, certain ways of operating on the situation, which presents itself. So, the child has some understanding of how to operate on the task, yet this framework is not sufficient to generate a solution. Posing questions, then, implies at least some form of pre-understanding. This pre-understanding may be

correct; the question may be posed for verification. The child's pre-understanding may be incomplete, and questioning adds to it. However, a question may highlight misunderstanding, creating a 'space' from which to mediate new understanding. The child's question demonstrates that the child's current experiential framework is not adequate for solving this problem, providing the teacher with a view of the present state of the child's knowledge, pointing to what the child needs to know, or be taught. The posed question, then, provides the perfect opportunity for teaching in that it shows the teacher what the child knows and what s/he needs to know in order to solve a particular problem. By highlighting the gap between what the child knows and what the child needs to know, questions provide unique access to the child's Zone of Proximal Development (ZPD), directing the teacher towards specific interventions. Questioning, then, is a very useful indicator of what assistance the child needs. As such, it is a useful learning-teaching tool for the teacher. So, the child's question does more than simply point to what s/he needs to learn; it directs the teacher's interventions, pointing to areas that need external regulation. According to Vygotsky (1978), the child's speech, initially externally directed, turns inwards during development. Therefore, the external regulatory function that expressive questions serve, must also turn inwards, becoming internal or self-regulation. The child's question, then, is not only a useful pedagogical indicator of the child's knowledge base; it is also a cognitive tool, capable of regulating mental actions. Self-regulation requires an ability to question one's own actions, in order to ascertain which are effective strategies for doing certain things and which are not. Problem solving, then, requires the ability to interrogate our own actions, to ask questions (Strohm-Kitchener, 1983). A learner's question provides the perfect opportunity for teaching by setting the learner and teacher on the same path, towards learning. Conversely, when used by teachers, questions can be very useful pedagogical mechanisms for provoking learning.

The kind of question asked by a teacher may be very different to that asked by the learner. Generally, learners ask questions because they are unable to solve a problem without the aid of the teacher. These kinds of questions are essentially closed, in that they don't provoke enquiry, but rather seek to close discussion by uncovering the 'right' answer. Conversely, teachers' questions have different aims. The teacher's question may be asked in order to ascertain the learners' knowledge base or merely to keep the lesson going. However, the teacher may ask questions that are intended to provoke cognitive conflict in learners in order to facilitate learning (Piaget, 1977). These kinds of questions disrupt current understandings, forcing a rupture between what the learner knows and the new object of knowledge under construction. Teachers' questions, then, can lead to learning by provoking disequilibrium in learners. Clearly, questions are very useful pedagogical tools, both for learners and teachers. However, this discussion has only dealt with dialogical questioning, where learners ask teachers questions and vice versa. Especially with very young children who are not literate, where knowledge is constructed not from acting on books but from acting on the world and interacting with others, dialogical questioning is certainly a powerful tool for learning. However, learners embarking on their first year of university study are not acting on the same kind of world as these children are; first year students have to engage with a specifically literate world, a world of text, in which familiarity with the written word is not merely a useful skill, it is an absolutely necessary one. What we need to address now, is the extent to which dialogical questioning is capable of mediating these learners' access into the extremely textual form of knowledge construction within academia.

It seems intuitively correct to view questioning as an interactive process, requiring that one interact with an 'other' (Lindfors, 1987). Generally, we ask other people questions, waiting expectantly for an answer. Hence learners' reliance on dialogical questioning; this is a format of questioning that they are familiar with. However,

questioning does not require another person in order for it to provoke learning. It is a fundamentally active process, whereby we actively explore our world. Initially, our questioning may be externally directed, towards another person who holds the answer. However, as we develop and speech turns inwards, we may begin to question ourselves, regulating our own actions when solving problems. So, one can question others and even question oneself in order to learn. One can also question text. Questioning text, however, requires a different kind of action from learners than dialogical questioning. In dialogue, the answer to one's question is immediately available. If one does not understand something said, one can merely ask the speaker what they meant. A direct answer from the speaker closes further enquiry. Hence, dialogical questions can close enquiry. Therefore, learners who are familiar with the kinds of questions posed in dialogue tend to construct questions in this form. In the Human Sciences, however, academic enquiry demands a critical stance to the text, viewing it as an invitation to open, rather than close enquiry. In order to interpret academic texts meaningfully, a learner must be able to open the text up, to critically question it. This kind of questioning is clearly very different to dialogical questioning, that closes enquiry. Learners approaching text as an authority that closes, rather than opens enquiry will be unable to effectively engage with university tasks. Learners need to be taught how to question text, how to open enquiry, if they are going to engage effectively with the demands of textuality. In other words, learners must be shown what kinds of questions are capable of opening up text. This requires that learners be taught to view text as 'in question' (Ricouer, 1981). Further, in academia, texts may be presented to learners in verbal format such as in a lecture or a tutorial. Consequently, opening up the demands of textuality is crucial to enable learners to engage with both written and verbal texts. That is, learners must be taught to 'read' text as a process of enquiry; appreciating the implicit questioning structure of text.

So in order to engage with textuality, learners need to understand text as implicitly containing the author's question, to which it (the text) is a possible answer (Ricouer, 1981). Text is therefore not infinitely open; it is generated in response to a particular question. Learners' ability to engage with this 'hidden' question is essential in defining the boundaries of textual interpretation. In the tutorial context, then, learners need to appreciate that the tutor's verbal text is generated in response to a particular question and that it is this 'hidden' question that they must engage with. Further, learners need to appreciate the questioning that text provokes in the reader. By opening up new worlds, text disrupts our familiar understandings, giving us access to new, unfamiliar worlds (Ricouer, 1981). It is this ability to change understandings, provoking learning, that enables text itself to mediate new understandings. However, for text to mediate new understandings, learners need to be familiar with the demands of textuality; they need to know how to approach text, how to question it, how to critically evaluate knowledge claims relative to other claims. Faced with textuality, particularly (but not exclusively) underprepared learners rely on familiar dialogical questioning styles in order to engage with text. Without assistance, many of these learners will continue to rely on dialogical questioning when approaching academic enquiry, leading them to regard text as a closed answer. In tutorial help-sessions, however, learners' reliance on dialogical questioning can be used to facilitate their access to academic enquiry. In dialogue tutors' can help learners' to read text, modelling appropriate questioning strategies for learners. Gallimore and Tharp (1993) suggest how teaching in the ZPD can facilitate learning (see also chapter 4). This notion draws on the Vygotskian (1978) notion of mediation where a more competent other can assist learners to solve problems they are unable to solve on their own. Therefore, where learners are unfamiliar with the demands of academic enquiry, and are unable to critically approach written text, tutors' can offer verbal assistance, guiding learners' actions with the text. Hence, in dialogue, the tutor models how learners should approach written text, indicating what kinds of questions

one can ask of text and showing learners how one can solve ill-structured textual problems. As the tutor is familiar with the critical demands of academic enquiry, she is able to mediate access to text to those learners who are not able to construct knowledge from text without assistance. So, one way in which tutors can mediate learners' access to academic enquiry is by teaching in the ZPD, reformulating written text and providing learners with a verbal text during tutorials. That is, tutors bring certain epistemic assumptions (meta and first level strategies) to bear on the written text, enabling them to select relevant information from the written text. As the tutor appreciates the hierarchical structure of text, she is able to construct a verbal text, a simplified, more focused version of the written text for learners to 'read'. It is in this sense that the tutorial is not an ordinary conversation. It is very specifically a textual context, both because tutors operate from and are informed by an epistemology of text and because this particular epistemic base leads them to construct a verbal text. Therefore, in help-sessions tutors can use dialogue to mediate learners' access to text. The understanding that dialogue can mediate the demands of textuality directly informs this research project. However, it is recognised that reliance on dialogical interactions may be problematic. The problem arises from the different meanings that learners and tutors attribute to the tutorial interaction. While tutors treat the interaction as an engagement with text, learners approach tutorial interactions as if they were conversations. Consequently, learners tend to view tutorial interactions as familiar dialogical interactions, raising a problem for learning.

The problem raised in terms of learning, is the extent to which reliance on a familiar (dialogical) mode of engagement is capable of provoking learning. Craig (1991) suggests that effective learning depends on 'defamiliarisation', where learners engage with tasks in which both the content and form are unfamiliar. Optimal learning occurs then, when both the content and form of the task facing learners is unfamiliar. This line of argument would suggest that the mode of communicating with learners

should also be unfamiliar, rather than a familiar dialogical mode. Indeed, if one accepts that action must precede understanding, it is surely more beneficial for learners to actively engage with the text, to work through tasks, than to ask tutors for answers to these tasks. There is no simple solution to this problem. Many underprepared learners are so completely unfamiliar with the demands of textuality that their access to university tasks would not be possible without the assistance they receive from tutors. Further, the nature of the dialogue that is constructed in tutorials is very different from the kind of conversational dialogue many learners are familiar with. The tutorial help-session is not a conversational setting; it is a literate context in which learners and tutors together construct knowledge. In this sense, then, the tutorial dialogue is actually an unfamiliar kind of interaction, capable of provoking learning. The tutor actively asks learners questions; however, learners are also required to ask questions. By specifically instructing learners to bring questions to help-sessions with them, learners are encouraged to adopt a questioning stance to the text. During the help-session the tutor can model further effective ways to question text. The interaction begins, though, with the learner's question. However, the request that learners initiate the tutorial interaction by posing questions has presented a problem of its own; learners do not readily engage in active questioning behaviour. Dillon (1988) suggests that progression through the schooling system, which tends not to reward questioning, seriously limits learners' questioning behaviour.

The traditional school classroom, while it teaches learners to read and write, also teaches them that to ask questions is to open oneself to failure. Peers may ridicule the learner's lack of knowledge; worse still, the teacher may confirm this by dismissing the learner's question as irrelevant or 'stupid'. In order not to appear stupid, then, the student must ask a question that very few classmates know the answer to. If the student asks a question that everyone knows (or appears to know)

the answer to, s/he will appear less capable than his/her peers. Hence, many learners preface their questions with "this may sound stupid, but" or "I know this sounds silly, but". Whereas teacher questions neatly identify turn taking (teacher asks, student answers) the student's questioning process is far less ordered or certain. At every step of the student questioning process, something can go wrong. The student can be laughed at, denied an answer or even be reprimanded for asking. For a student to ask a question they must negotiate talk time; they must in effect seize the opportunity to dominate talk time (Corno & Snow, 1986; Cazden, 1986; Carlson, 1991). This takes a lot of initiative, requiring activity, energy, self-esteem and independence on the learners' behalf (Dillon, 1988). Most learners are unwilling, or even unable, to make this move. It takes more than merely wanting to know an answer to ask a question, it requires real courage, requiring that one 'puts oneself in question' (Miller, 1994; Shotter & Gergen, 1992). This point is extremely important when attempting to understand the questioning strategies of university learners. Those learners whose educational background has left them underprepared for engaging with university tasks are particularly wary of opening themselves by questioning. In posing questions then, one must not only be able to ascertain what it is one wants to know, one must also be able to pluck up sufficient courage to gain 'talk time'.

The impact of schooling on developing critical questioning abilities, then, is far from encouraging. Learners generally leave school with little or no questioning stance towards knowledge. (Note however, that lack of encouragement in inculcating a critical questioning stance is not merely indicative of schooling. In their social contexts, learners are not encouraged to question their elders or people perceived as social superiors. This is especially true of learners from certain cultural backgrounds, where to question authority is deemed disrespectful (See for example, Hardman, 1998). Essentially this uncritical approach to questioning leads learners to pose only

those questions that require direct factual answers, questions that close discussion. Posing closed questions ensures that no further probing into your knowledge (or lack thereof) is undertaken by the teacher. The very nature of classroom interactions (where the teacher decides the direction of the questioning interaction, rather than pupil) mitigates against learners' posing questions that 'open' discussion. Open questions then, seek to provoke teaching, eliciting discussion and leading to learning, while closed questions close enquiry (Meyer, 1988; Dillon, 1988). Teachers themselves rely heavily on posing closed questions, questions that are not questionable, questions to which they know the answer. Such questions are not 'in question' for the teacher. The answer is safely known and further discussion is not necessary. By the time they have reached university, learners have nearly perfected the art of not asking questions. Faced with a perceived 'classroom' situation, in the help-sessions, initially only a few learners volunteer their questions, for both peer and tutor 'review' (Wilson and Haugh, 1995). For this reason (given the importance of questioning in learning) learners are required to specifically bring their own questions to help-sessions. The tutor does not prepare any questions of her⁵ own, but rather waits for the learners to pose questions. Some learners however, appear unable even to formulate effective questions.

If learning requires the ability to question effectively, the inability to pose effective questions severely limits these learners' opportunities to learn. Clearly, a strategy, which enables learners to develop effective questioning techniques, is needed. This requires understanding what epistemic assumptions inform learners' questions and comparing these assumptions with the demands of textuality. Developing an understanding of what informs learners' questioning must involve identifying the kinds of questions learners ask as well as assessing the kinds of questions tutors ask

⁵ The tutor team is comprised entirely of women. Therefore, the feminine pronoun will be used throughout this research when designating tutors.

to facilitate active learning on the learners' behalf. This requires an analysis of the kinds of questions learners/tutors ask in order to identify effective learning-teaching strategies for underprepared learners, highlighting the epistemic assumptions informing their engagement with text. The nature of the tasks/interactions learners are presented with must facilitate questioning/provoke disequilibrium, shifting them to new understandings, provoking learning. The ultimate goal, then, of identifying and implementing effective questioning techniques (both in tutors and learners) would be one of empowering both tutors and learners, facilitating a culture of learning in the University that is driven by autonomous learners. To this end, the objectives of this research are to:

- 1) Examine the kinds of questions learners ask in help sessions, uncovering the epistemic assumptions informing these questions and assessing whether these questions enable learners to approach university tasks effectively by contrasting them with the questioning epistemology of university study/tutors; and
- 2) Identify effective strategies employed by tutors to facilitate active learning, with a particular focus on the sorts of questions used to provoke or inhibit learning.

Further, Shepherd (1998) suggests that merely investigating questioning strategies without exploring the responses they elicit will not provide a detailed understanding of the questioning process. Consequently, questions as well as the responses they elicit form the unit of analysis. Of particular interest to this project is the identification of successful intervention strategies for underprepared learners, whose inability to formulate effective questions or to interpret tutors' questions appropriately, impacts on their ability to construct knowledge successfully. In order to answer these questions, data from 15 help-sessions was recorded and transcribed. Analysis of the data was carried out at two levels: a quantitative analysis and evaluation of the data in terms of specific categories and a qualitative elaboration of the patterns identified in the quantitative analysis. The complementarity of these apparently opposing methods of analysis is argued for in chapter 5. At the point of analysis, a categorical

framework was imposed upon the data to order it more effectively. The categories identified were suggested by the data and informed by the following theoretical frameworks: The understanding that questions can be viewed as manifest products, pointing to the generative processes underlying them, is informed by Vygotsky and Luria's (1976) experimental-developmental methodology. Strohm-Kitchener's (1983) conceptualisation of puzzle like problems and the closed questioning strategies they elicit is used to identify closed questioning strategies. Ong's (1982) elaboration of the cognitive demands of orality and literacy and Craig's (1991) understanding of learners' commonsense epistemology provide the theoretical framework in which to situate and explain underprepared learners' epistemic assumptions. Learners' questioning strategies and the epistemic assumptions that inform them are then compared with tutors' questioning strategies and contrasted with the demands of textuality elaborated by Strohm-Kitchener (1983) and Ricouer (1981).

1.7. Overview

This research is situated within a social context of extreme fluidity and change. Traditional teaching-learning methods need to change if South African Universities are going to provide equal access to learners as well as ensure that the different needs of learners are effectively met. Educators, then, need to develop teaching materials and teaching-learning contexts that are sensitive to the different needs of diverse learners. Situated within a specific educational context, namely university tutorials, this research seeks to gain insight into the process of how learners construct knowledge at university, by focusing on the process of questioning that learners and tutors engage in during tutorial help-sessions.

The study's focus on questioning as both a cognitive tool *and* a mechanism for teaching and learning is informed by the following assumptions regarding questioning: 1) Questions provide a window into tutors' and learners' thought

processes illustrating the particular epistemic assumptions from which the learner is operating as well as demonstrating 'gaps' within that knowledge base, providing moments for mediation. 2) Tutors' questions can invite learners' to act in new ways, shifting learners' understandings from the familiar to knowledge of the unfamiliar and 3) that learners and tutors rely on different epistemic assumptions in order to engage with the uniquely textual form of knowledge construction at university. Therefore the study concludes that learners' and tutors' bring different epistemic assumptions to bear on their engagement with textual tasks. Learners' evidence none of the critical open questioning strategies required to engage with the demands of textuality. Rather, they appear to rely almost exclusively on asking closed questions and giving closed responses to tutors' questions. As the tasks that learners must engage with at university require that learners are able to critically interrogate the demands of textuality, this finding suggests a disjuncture between learners' questioning strategies and the demands of university tasks. Further, underprepared learners' unfamiliarity with text and their inappropriate use of open questions indicates that these learners are not applying the cognitive processes required to solve ill-structured problems. As these are precisely the types of problems facing learners in academia, clearly learners must be provided with a learning-teaching context capable to mediating their access to text. By focusing on questioning strategies in tutorial interactions, this research concludes that dialogical questioning in tutorials can mediate learners' access to text based resources, providing the kind of teaching-learning context capable of meeting the needs of diverse learners.

2. A SOCIO-CULTURAL FRAMEWORK FOR LEARNING AND CHANGE

"Every colonised people- in other words, every people in whose soul an inferiority complex has been created by the death and burial of its local cultural originality- finds itself face to face with the language of the civilising nation: that is, with the culture of the mother country. The colonised is elevated above his jungle status in proportion to his adoption of the mother country's cultural standards. He becomes whiter as he renounces his blackness, his jungle."

Fanon, F. 1952:18

2.1. Introduction

The need for transformation within South African universities has been argued for in chapter one. The need for change, however, is problematic in that it contains within it both the need to change formerly elitist universities, developing curricula that reflect their uniquely South African context, as well as the need to develop learning-teaching contexts capable of meeting the needs of a large body of heterogeneous learners whose learning needs may differ substantially. Chapter 2 investigates a theoretical framework capable of accounting for how learning and change is possible. The contentious debate regarding whether in fact learners (or the university) need to be changed is, arguably, settled by this framework which suggests that change is a dialectical process; certainly learners change when learning, however, the university itself (an institution that is peopled by lecturers and tutors who themselves change through interacting with different learners) necessarily changes to reflect the new foci introduced by heterogeneous learners and different (African) epistemologies. Having said this, however, the very real challenge to intervention strategies that focus on changing learners as opposed to curricula levelled by those who point to the symbolic violence done to when learners are taught the knowledge of the coloniser in the 'language of the coloniser', is discussed.

2.1.1. Towards a socio-cultural framework for learning and change

Given the different learning histories of university learners in South Africa, the

problem becomes one of how to conceptualise this difference. Perhaps the obvious first approach is to assume that learners who are not engaging effectively with university tasks lack the requisite knowledge to do so. On this interpretation, this deficit, or lack of knowledge contains within it the possibility that the learner can be taught the requisite content needed to approach university tasks (Moll & Slonimsky, 1989, Miller, 1989b). A second interpretation could view the learner's failure to approach university tasks effectively as a result of inadequate or deficient cognitive structures. This is a bleaker scenario than the first one, in that it must imply that teaching will fail as the learner has deficient cognitive structures. This research does not adopt a deficit model of cognition. Rather, this research adopts a more empowering cognitive conception of underprepared learners that accepts that these learners possess underdeveloped rather than deficient cognitive functions (Feuerstein, Rand, Hoffman & Miller, 1979; Feuerstein, Rand, Miller & Jensen, 1981). That is, intellectual development is viewed as a dynamic process, capable of change, rather than a static entity.

According to Feuerstein et al (1979, 1981) cognitive functions will be underdeveloped in an environment where mediation is inadequate. This does not mean that these functions cannot develop; rather Feuerstein's (1980) concept of 'cognitive modifiability' stresses the fact that intellectual capacity can be modified by mediation. The "mediated learning experience" (MLE) is seen by Feuerstein as a constructed interaction between the individual and their environment "in which the stimuli emitted by the environment are transformed by a mediating agent, usually a parent, sibling or caregiver" (1980: 16). So, much like Vygotsky's notion of mediation, it is a mediator (an other) who provides guidance, bridging the discontinuity between what the individual knows and is able to do and the problem solving demands of the

specific task. Feuerstein's notion of 'cultural deprivation'¹ (in which inadequate, mediation leads to underdeveloped cognitive functions) is specifically relevant to this research. According to Feuerstein (1980), in times of transition or of social uncertainty, there may be a breakdown in the mediation between (m)other and child, resulting in the underdevelopment of the child's cognitive schema, necessary to approach certain tasks. The impoverished education as well as the deprived social conditions of the historically disadvantaged South African black learners certainly lends itself to a conceptualisation of these learners as deprived, having not been appropriately mediated, and consequently lacking the cognitive functions required to embark on a university career. It is this view of underprepared learners as needing mediational opportunities to facilitate their access to university ways of knowing that forms the basis for the socio-cultural framework in which this research is situated. This research, then, is situated firmly within a framework which accepts that mind operates in society; and vice versa. What begins as external mediation, or other regulation, becomes internalised by the child, developing into self-regulation (Vygotsky, 1978). In other words, the very nature of individual self-regulation (cognitive control of independent action) is in fact social in origin, beginning as other regulation (mediation) before being internalised by the child. This research, then, conceptualises the different learning histories of learners (and resultant different approaches to university tasks) in terms of learners' previous mediated learning experiences. This requires understanding human action as both generative of and responsive to the social realm as well as the elucidation of a theoretical framework capable of accounting for this dynamic relationship between the social and individual.

¹ Readers familiar with Vygotsky's (1986) work may recognise his conception of the "primitive child", whose cultural development is delayed, in Feuerstein's notion of Cultural deprivation.

2.1.2. Situating the debate: deconstructing the individual (mind) /society (culture) binary.

Various psychological theories over the century have attempted to account for the relationship between mind and culture. On the one hand, psychological theories of cognition favour individualistic explanations of cognition, privileging the rational individual subject as the source of knowledge, while on the other hand, social theory provided explanations of cognition, which privileged the socio-cultural domain as determining cognition. Both types of approach to cognition, whether favouring individualistic or social explanations have limited explanatory value due to their over reliance on the dualistic framework which sets up the individual and social domains as binary opposites (Parker, 1997). Psychology's reliance on the notion of the individual as a unitary rational subject, who is the locus of his/her judgements, leads it to regard the social world as contingent. Consequently, many psychological explanations of cognition have been couched in individualistic terms. This individualistic bias results in theories of cognition which largely ignore the profound effect socio-cultural historic conditions have on the construction of thought. Moreover, by creating the individual as the central determiner of thought, such theories fail to account for the importance cultural membership has on one's cognitive development. Even definitions of what constituted a 'group' have, historically, tended towards individualistic explanations. For example, Allport (Foster & Louw-Potgieter, 1991) epitomises the individualistic approach in his claim that "there is nothing more to groups than the individuals that comprise them." (1991:28). This individualistic bias is not unique to the field of psychology. Even sociological theory, with its emphasis on the social determinants of behaviour, is drawn to theorising the social world as a product of human action. Weber (Miller, 1984) for example, views social objects as products of intentional human action. Such a conception of society suffers from the error of voluntarism, in that it conceives of society as merely a product of human activity. So, even in sociological theory, the

rational human is posited as central, the social marginalised. Ultimately, individualistic theories serve to maintain the status quo, conserving dominant ideologies, by locating responsibility for social processes (such as cognitive construction) firmly within the 'rational' individual. Such theories would locate responsibility for low scores on IQ tests firmly within the individual, ignoring effects of social deprivation or the lack of educational opportunities. For those disillusioned with this focus on the individual, a socio-cultural standpoint appeared to open the way to a more rounded theory of cognition.

The anti-humanist approach epitomised by Marxist and structuralist analyses took up the socio-cultural side of the dualism debate, privileging the social domain as determiner of cognition². These approaches attempted to provide a theory of the 'social', which took ideology and power relations into account, often without adequate consideration of the individual subject. In sociology, Durkheim's attempts to theorise the interrelationship between the individual and social led him to posit the existence of social objects, independent of individuals. These social objects exert pressure on the individual to act in certain ways, compelling the individual to behave accordingly. Thus, in Durkheim's theoretical system, society is reified; conceived of as capable of existing in the complete absence of human activity. The binary remains, with the social now privileged and the individual marginalised. Clearly, deconstructing the binary opposite social/individual requires more than merely shifting focus from one to the other. In psychology, Althusser's (1977) theory of ideology attempted to combine the strengths of Marxist socialist theory with an explanation of human subjectivity, which avoided the pitfalls of humanism (Hayes, 1989). The problem was how to

² The most eloquent socio-cultural elucidation of cognitive development is a Vygotskian (1978) notion of mind in society which is neatly summed up in the following quote: *"Where do correct ideas come from? Do they drop from the skies? No. Are they innate in the mind? No. They come from social practice, and from it alone. They come from three kinds of social practice, the struggle for production, the class struggle and scientific experiment"*(Mao Tse Tung, 1971:502)

account for the obvious effects ideological practices have on the subject, without postulating the subject as a pre-given rational entity.

Althusser's (1977) materialist theory of ideology addressed what earlier theories of ideology had failed to; namely how ideology operates at the level of the subject. It must be noted that Althusser made a clear distinction between the categories of the 'individual' (a concrete person) and the 'subject'. For him the 'subject' "is the constitutive category of all ideology" (Althusser, 1977:160). Althusser attempted to develop an understanding of the relation of ideology and the subject by theorising the ideological level as relatively autonomous, yet determined by economic factors. This amounted to saying that ideologies had actual material existence and weren't merely 'faulty beliefs' (Hayes, 1989). However, in order to maintain this claim, some notion of a thinking subject needed to be theorised to account for how people's beliefs could become autonomous. Althusser accounts for this by suggesting that people act 'as if' ideology is real and by doing this make it the reality they live. To avoid falling back into the humanist trap, he proposes that ideological state apparatuses (such as schools, family and the church) work by 'interpellation'³ to form the subject. However, this fails to account for what type of entity must exist in order to recognise itself through these ideological relations. This criticism notwithstanding, from Althusser, we learn the important role of ideology in creating thinking subjects. Nevertheless, unless the individual-social dualism is transcended, we inevitably return to postulating the pre-existing rational subject (Henriques et al, 1984). The challenge was to develop an account of cognition in society that would not be reduced exclusively to the individual dimension on one hand or the social dimension on the other (Henriques et al, 1984). Miller (1984) suggests that as long as we continue to view human activity as reactive, a passive mind upon which culture 'writes', we will

be forced to postulate a binary between the two, treating them as separable entities. It is this artificial scenario that enables us to be lulled into the seductive debates of cultural relativism, to imagine that cultures or minds are entities that can be measured and compared. If however, we view human activity as both capable of generating and responding to the world in which these actions are carried out, then we can begin to develop a psychological theory of human activity mediating between mind and culture. We must now address what a model that adequately relates the individual and social realms could look like.

Bhaskar (1979) outlines how Berger and associates attempt to overcome this binary, by conceiving of the social and individual realms as dialectically interrelated, with individuals both producing and being produced by society; an interesting, although not entirely comfortable, attempt at combining Durkheimian and Weberian stereotypes into a meta-narrative, capable of overcoming the dualism inherent in many psycho-social theories of cognition. Bhaskar (1979) rejects this integration of Weberian and Durkheimian stereotypes. According to Bhaskar (1979), this dialectical conception of society cannot succeed because it relies on the conception of the individual and social as a dialectical unity. For Bhaskar (1979), the individual and society are different kinds of things. Proposing a transformational model, Bhaskar argues that society must always necessarily pre-exist individuals. Therefore, individuals do not in fact produce society, but rather 're-produce' (or transform) it. This does not of course necessarily result in the reification of society as existing independently of individuals. What this amounts to is a conception of society as pre-existing individuals, yet not existing independently of individuals. This conception avoids the error of voluntarism, in that it does not assume that society is the product of human activity. Through socialisation, the individual learns the skills and

³ Interpellation is a process of recognition whereby authority figures, such as parents and teachers 'hail' the subject. The subject does not exist prior to recognition via these ideological

competencies appropriate for the reproduction and transformation of their particular society. The outstanding feature of this model is its ability to account for transformation. If educational intervention is going to facilitate effective learning at university for underprepared learners, it must be able to provide an explanatory framework for such transformation.

Miller (1984) extends Bhaskar's (1979) model from a two-dimensional to a three-dimensional model, in order to elaborate the relationship between mind and culture. This mediating system between human action and society is created through the positions that individuals occupy (for example, tasks, places etc) and the practices (activities such as reading) that individuals engage in when occupying these positions. For example, at university a learner occupies the role of 'student' reading for a degree. Significantly, this model becomes animated only when the individual is in *action*. The individual agent engaging in a role prescribed by a social form (say our student reading for a degree) embodies the dialectic, similarly, a social form can be expressed by a group of individual agents (Miller, 1984). The point is, it is in this process that one can talk of 'mind' and 'culture'. These are not 'things' which can exist independently of one another. What this model highlights is that the terms 'mind' and 'culture' should be understood in action; conceptualising mind and culture in action enables us to understand them as co-ordinated generative forces, to be studied together.

2.1.3. A framework of transformation: Vygotsky's Zone of Proximal

Development

To implant [something] in the child... is impossible... it is only possible to train him for some external activity like, for example, writing on a typewriter. To create the zone of proximal development, that is to engender a series of processes of

declarations, but the individual does.

internal development we need the correctly constructed processes of school teaching (Vygotsky, 1933d/1935: 134).

In attempting to understand the genesis of thought and language in the human individual, Vygotsky (1978) provided a theoretical basis from which to overcome the binary opposites of mind and culture by viewing mind in culture. According to Vygotsky (1978) the individual is always necessarily already social, any attempt to theorise the individual as distinct from the social realm fails to appreciate the interrelationship between mind and culture. This interrelationship is conceptualised by Vygotsky in terms of 'mediation' or other regulation; initially externally located this regulation turns inwards, becoming self-regulation. For Vygotsky, development is made possible by cultural regulation. Psychological functions begin as inter-personal functions, with (m)other initially regulating the child's entrance into society. What begin as inter-personal psychological functions, become internalised by the child, throughout development, becoming intra-psychological (cognitive) functions. Equilibration (Piaget's (1977) term for self-regulation), then, is essentially a function of cultural regulation. This child is not the Piagetian (1977) epistemic subject, independently constructing knowledge as it 'transacts' with its environment. The child in Vygotsky's theory requires guidance, its activity must be directed by a cultural regulator. Vygotsky refers to this area of directed activity as the Zone of Proximal Development. Within this zone the child acts with the aid of an other in order to understand and solve problems that it cannot solve unaided. Through mediated action the child comes to understand. Through action, culture becomes internalised as a set of regulatory processes. It is here, within this 'zone of potentiality', that mediation as instruction provides an impetus for learning and consequently, change. The ability to explain such potentiality, hidden and not yet manifest, required the development of new psychological methods, capable of explicating the processes underlying psychological products.

Advocating a developmental approach to studying human activity, Vygotsky (1978) noted that it is the process and not the product of human activity that requires explanation. Rather than viewing psychological entities as fixed or stable, Vygotsky proposed that the processes underlying these products must be uncovered and analysed. In order to explain and understand psychological entities, then, we must reconstruct how they developed. This allows for a dynamic conception of change. The purpose of the developmental analysis then, is not to study manifest performance, but to uncover the generative processes. However, many psychological processes have become so automatic, so fossilised, that their manifest appearance hides their inner nature. Gaining access to the generative processes requires a developmental reconstruction of how the manifest products came to be expressed. In Vygotsky's (1978) notion of mediation we find a conceptual basis for theorising educational change within a socio-psychological framework. However, talk of changing learners is problematic. The problem arises as a challenge from cultural relativists who point to the recognition of differential educational performance as a slippery slope which leads necessarily to a claim of differential capacities. Especially in South Africa, whose history of segregationist policies highlights what can happen when acknowledging difference becomes a basis for discrimination, theorising difference requires meeting the critique of cultural relativism head on.

2.1.4. Challenging Change: Cultural relativism's critique of a socio-psychological framework

This research argues that learner support, in the form of educational interventions, is necessary to mediate learners' entry into university. There are however, those who would counter this argument for academic support by suggesting that this kind of support is merely an extension of the cultural imperialism engaged in by colonial universities. On the one hand cultural relativists point to the potential harms that can

be inflicted on heterogeneous learners if their different epistemic frameworks are not recognised a priori as inherently valuable; the argument here clearly points to a change in Eurocentric curricula currently taught at Universities around South Africa, rather than aiming at changing learners. Simply put, we are called upon to change the Universities, and, consequently, accommodate heterogeneous learners. On the other hand, others (who recognise the dangers of treading the slippery slope of cultural relativism) argue that culture, in so far as it means anything, is in fact itself a product of human action, not a 'social thing' somehow distinct from human cognition (Miller, 1984). In its most elegant elucidation, this framework overcomes the (artificial) binary opposition, which separates individual cognition from the social world, by conceiving of human individuality as necessarily social. Here we find the basis for Vygotsky's (1978) 'mind in society'. Here, at least, we have a potential theoretical paradigm in terms of which to account for the very real fact that learners do in fact change during the process of learning. Herein then, lies the challenge to cultural relativists who argue for changing institutions alone, without changing learners. Clearly, within this model, changing learners is not only possible, but also empowering. However, before adopting this framework, we must address the very real challenge of cultural relativism, elucidating its arguments in order to overcome them with the framework for transformation proposed by this research. The lure of cultural relativism can be strong, especially in a multicultural society, such as South Africa, whose history of segregation leads many to want to ignore difference and recognise all cultures as equal. The problem however, is that people demand recognition for their unique cultures, while espousing ideals of universalism. In a multicultural society, such as South Africa, the tension between the recognition of cultural equality and the politics of difference needs to be practically addressed by a theoretical framework that does more than pay lip service to the recognition of difference. The Canadian philosopher, Charles Taylor, suggests such a framework (Taylor, 1994, 1991).

In the absence of fixed, immutable principles proclaimed by 'postmodernism'⁴, people are no longer assigned specific social roles, but have to define their paths for themselves, both individually and collectively (Harvey, 1989; Fukuyama, 1992; Lyotard, 1984). For Taylor (1994), the resulting individual is called on to live life 'authentically', by being true to oneself and living life in a self-fulfilling way. However, according to Taylor (1991), authenticity does not pre-suppose an autonomous individual existing independently of his/her socio-historic context. The self who seeks authenticity always lives in the light of a background of significant issues, social and cultural, that influences and is influenced by self-determination. For Taylor (1991), identity is socially negotiated through dialogue with significant others. The modes of expression we use to define ourselves (such as language, emotion and gestures) are gained through exchanges with others. The language that we speak actually influences our identity, where identity designates something like a person's understanding of who they are, what defines them as human beings. Moreover, it is generally accepted that our identity is partly shaped by the recognition of others. The importance of recognition has been intensified by the understanding that our identity formation requires recognition from others and is no longer necessarily determined a priori by virtue of gender or class. For example, being a woman today does not have the same meaning it did at the turn of the century. Similarly, the rigidity of class structures has gradually become more permeable, with social mobility more possible, at least theoretically, today than at the turn of the century. According to Taylor (1991) recognition of our identity is no longer pre-given; we have to win recognition through exchange. Therefore, if your society or the people that you have contact with mirror back to you an image of yourself that is demeaning or confining, actual damage can be done to your identity and consequently your perception of self. In his book **Black**

⁴ Note that whether one subscribes to the notion that we live in a post modern era or not, there is clearly an intuitive feeling that edifices are crumbling; nostalgia for the certainty proclaimed by the Cartesian ego will not bring that certainty back, rather, Derridian (1995)

Skin White Mask, Fanon's (1952) account of his own experience as a black man living behind a white mask, elegantly traces how non-recognition or misrecognition can imprison someone in a false mode of being. Clearly then, recognition carries with it the notions of respect and value judgements. As our identity is socially negotiated and formed through recognition it is crucially important that our society recognise us as deserving respect as equals. Taylor points out that in order to recognise people as equals we have to respect the equal value of their differences (Rayner, 1992). Value is not subjectively conferred but is determined against cultural 'horizons of intelligibility', which confers significance on our choices. According to Taylor, these 'horizons' provide frameworks against which we define our identities and learn to respect the equal value of our differences; essentially these frameworks provide the background against which we are recognised and against which we recognise others. The demand for recognition, however, especially in multicultural societies can be extremely problematic. The problem arises because the need for recognition has two distinct meanings, each offering a different view of equality.

Democracy, only recently achieved in South Africa, requires that all people, regardless of "race", gender or culture are recognised as equal. The focus here is on what is the same in all humans. Taylor (1994) calls this the politics of universalism or equal dignity. The democratic state seeks to remain neutral about what constitutes leading a 'moral/good life' and promotes non-discrimination by being 'difference blind', essentially attempting to treat individuals in society as a homogenous group. This then constitutes the first meaning of recognition. The second meaning requires that individuals be recognised as unique; that is, they are recognised as possessing an identity, which is different to others. This relates to Taylor's notion of 'authenticity' which requires that ~~each~~ each person is recognised as possessing a distinct identity, which

deconstruction wickedly unravels textual meanings, daring us to celebrate '*difference*' by deferring meaning.

is valuable. In this sense, recognition requires that one's unique identity is respected not for its similarity to others' identities but for its difference. This Taylor calls the 'politics of difference'. The two meanings incorporated into the politics of recognition account for the tension experienced in theorising identity construction in a multicultural society. On the one hand we want to be recognised as universally equal (members of the 'human race') yet on the other hand we want to be recognised for our unique cultural identities. If we relate this to the debate surrounding tertiary education in South Africa, we can see that the Universalist position is unsatisfactory because it seeks to impose the western learning/teaching model on all societies and cultures, ignoring important differences. The other position, however, where differences are recognised as equally valuable is also unsatisfactory. Clearly at some point we have to be able to say that not everything, gathered from every South African culture can count as 'knowledge'. We no longer live in an isolated country. In the 'global village' we need to seriously consider the practicalities of teaching in 2, let alone 11, languages.⁵Cultural relativism loses coherence the moment it accepts that anything goes, that every culture is valuable a priori. Moreover, cultural relativism leads to Nationalist theorists who adopt homogenising concepts about African culture and in particular 'African women', which ultimately end up reproducing the colonial constructs they are attempting to criticise (Appiah, 1992; Bhabha, 1986). This ends up eventually supporting the status quo because of its failure to explicitly critique the interconnections among gender, class, ethnic and imperial relations. It romanticises the past contributions to the 'invention of tradition' and can be used by rulers to endorse new forms of gendered authoritarian rule. In stressing differences from the west, this homogenises Africa and promotes stereotypes, which ignore variations in historical experience, economic structures, cultures and changes over time. This kind of reaction has yielded essentialist and historical myths of the 'African Family' a

⁵ It is worth noting that the Government's White Paper acknowledges the importance of 'saleable' (professionally recognised) degrees. We could perhaps infer, then, that obtaining a

single 'African culture' or 'African philosophy' and the golden age of precolonial Africa (See for example Appiah's 1992 discussion regarding Africa). Clearly Afro-centred curricula will suffer from many of the same problems Euro-centred curricula do. It seems that adopting an either-or position in this debate is inadvisable and that one should rather draw what is useful from both positions. In his attempt to reconcile these two positions, Taylor shows that we don't have to choose either one position or the other but that we can hold both positions.

Taylor suggests that a politics of difference can be endorsed within the boundaries of the politics of universalism; in which different cultures negotiate cultural value against a shared framework which is constantly constructed and re-constructed to incorporate difference. What this amounts to in tertiary education is a joint construction/reconstruction of meaning, between tutor/lecturer and learner. This requires a dialogical framework in which issues regarding value are jointly constructed by both tutor and learner. Moreover, this requires viewing the mediation process as dialectical; not only does the tutor affect transformation in the learner, but they are themselves changed through interaction with the learner. The process of transformation must incorporate an explication of the epistemic demands of the university as well as an analysis of the epistemic frameworks employed by both learners and tutors. That is, the particular knowledge vantage points of the University, learners and tutors must all be unravelled in order to pave the way for a shared epistemic framework, creating new possibilities for interpreting knowledge claims. I would argue that such shared frameworks could only be truly accomplished in a climate in which the politics of recognition provides an ethical foundation for knowledge construction. In Taylor's theory regarding the politics of recognition and his moral principle of 'authenticity', cognitive theories of learning are supplemented with a crucial basis from which to recognise difference in a multicultural society.

major in say, the practices of the Pedi 'Molopo' will not be possible in the foreseeable future.

2.2. Concluding comments

This research accepts then, that in the debate surrounding tertiary education in South Africa, the tutor's role must be one of collaboration. This amounts to recognising the cultural importance of epistemic frameworks employed by heterogeneous learners, appreciating their differences while at the same time, attempting to construct epistemic frameworks which facilitate learning in the university environment. Which epistemic frameworks count as valuable will be negotiated against a **shared framework**, which is constantly constructed and reconstructed as tutors learn more about heterogeneous learners and vice versa. That is, tutors should approach heterogeneous learners with a presumption that they have something to contribute to them (the tutors), without judging the value of that contribution until we share a framework against which to judge questions of significance. Stated bluntly, simply imposing an epistemic framework upon learners, who may or may not fully appreciate the flaw in their mis/understanding cannot lead to transformation. This process can only lead to a re-production of existing rationalities, rather than truly transforming learners. Recognising the dialectical nature of mediation, wherein both tutor and learner negotiate meaning, is, perhaps, a positive step in effectively transforming learners and creating new possibilities for knowledge construction. This degree of co-operation can only be achieved in a climate of recognition, where both parties respectfully negotiate the value of each other's epistemic backgrounds, within a theoretical framework capable of accounting for transformation as well as incorporating a practical model for mediating underprepared learners access to textuality. In so far as Vygotsky's developmental method enables an explication of fossilised behaviours/cultural practices, it provides a means with which to explicate the nature of learners' cognition as well as the nature of university ways of knowing. In the following chapter, Pinard's (1986) elucidation of metacognition provides a theoretical foundation for a deeper understanding of what the underdevelopment of cognitive functions can mean for

adult cognition; while Strohm-Kitchener's (1983) three level model of cognitive processing accounting for how individuals solve ill-structured problems, provides an analytic framework in which to understand the kinds of cognition required to approach university tasks in the Human Sciences.

3. WAYS OF KNOWING

Just as the tools of labour change historically, so the tools of thinking change historically.

And just as new tools of labour give rise to new social structures, new tools of thinking give rise to new mental structures (Berg, 1978: 132)

3.1. Introduction

The above quote by Berg (1978) suggests that new technologies, such as writing, must give rise to new ways of thinking. The deeply literate and entirely textually based nature of university knowledge suggests, then, that particular ways of operating on, or thinking about, knowledge construction are required to effectively engage with university systems of knowledge. In Chapter 2 the possibility of a disjuncture between learners' epistemic assumptions and the implicitly critical epistemic assumptions underlying university tasks was introduced. In order to develop this line of thought, clearly an elaboration of the epistemic assumptions underlying university tasks as well as an elaboration of the nature of learners' epistemic assumptions is required. Chapter 3 examines the epistemic assumptions informing university ways of knowing by elucidating the demands of textuality. Strohm-Kitchener's (1983) elaboration of a 3 level model of cognitive processing provides an analytic framework in which to discuss differences between learners' epistemic assumptions and the specifically critical epistemic assumptions underlying the ill-structured problems facing them at university. Craig's discussion regarding learners' reliance on a commonsense epistemology provides a detailed understanding of the kinds of epistemic assumptions informing learners' engagement with university tasks. Finally, given the extremely literate demands of academia, Ong's (1982) discussion regarding the cognitive demands of literacy is used to illustrate how the internalisation of a technology, such as writing, can significantly alter a learner's epistemic assumptions.

3.2. The cognitive demands of text

3.2.1. Questioning, Metacognitive Control and Epistemic Cognition

According to Strohm-Kitchener (1983) the epistemic assumptions of university require that learners understand the contextual relativity of knowledge as well as appreciating how knowledge progresses through series of scientific revolutions, to borrow from Kuhn (1970). The textual form in which Human Science knowledge is constituted, embodies this conception of knowledge as constructed and contested. Given the ill-structured nature of the problems presented to learners in the Human Sciences, Strohm-Kitchener's model provides an account of the kind of cognitive processing necessary to engage with these tasks. According to Strohm-Kitchener, unlike puzzles, which have guaranteed final solutions, ill-structured problems require the ability to weigh up opposing evidence; pragmatically selecting the solution which best fits the problem. Ill-structured problems have a specific epistemic nature, requiring that the problem solver approach them with the appropriate epistemic assumptions. In other words, the problem solver approaching the ill-structured problem must be able to sift through opposing perspectives, disregarding some solutions in favour of others. The problem solver realises that her/his solution is contextually relative, a better solution may in time replace this one. So, appreciating the contextual relativity and dialectical progression of all knowledge are requisite skills for solving ill-structured problems. The ability to select some solutions over others requires the ability to monitor one's own thought processes. Strohm-Kitchener postulates a three level model of cognitive processing to account for how an individual involved in solving ill-structured problems can monitor his/her own problem solving activities.

The first level of cognitive processing requires the ability to perceive, monitor, compute, acquire language and so on. At this level of cognitive processing the focus is on gathering information. The second level of cognitive processing, metacognition,

refers to the individual's monitoring of his/her problem solving ability in engagement in first-order cognitive tasks. This level of cognition requires knowledge of self, knowledge of how to approach the task, as well as experience. Clearly, the effective use of metacognitive processing requires that the individual can analyse questions as well as pose effective questions. When attempting to solve an ill-structured problem an individual must be able to ask certain basic questions. For instance, is the problem solvable? Further, questioning our own activity helps us to monitor our efforts to solve the problem; for example, is this the right solution, could this one be better and so on. Elaborating on the self-regulatory function of metacognition, Pinard (1986) argues that metacognitive control entails knowing both how to do something as well as why one uses specific strategies as opposed to others. So, metacognitive control entails the ability to both do something and theorise or provide reasons for why one has done it. Such self-regulation, according to Pinard (1986), relies on the ability of internal feedback to achieve its goals. Self-regulation is characterised first by an inversion in the relationship between conceptualisation and action, with conceptualisation preceding action. That is, self-regulation is not externally anchored in actions but becomes internally regulated, facilitating an ability to understand both what actions to perform to obtain a desired goal as well as reasons why certain actions are more appropriate than others¹. This in turn provides for a heightened ability to anticipate the outcomes of certain actions, obviously impacting on goal directed behaviours. Second, advanced self-regulation enables the individual to reflect on her/his own feedback processes. This allows the individual insight into why s/he uses certain strategies to achieve ends rather than others, facilitating the elimination of redundant or unsuccessful strategies. Further, the ability to reflect on the reasons one does things enables the individual to actually reflect on her/his own

¹ Notice, though, that this process of regulation begins as external regulation, before being internalised as self-regulation. This conceptualisation of self-regulation is further elaborated in Vygotsky's (1978) notion of mediation, initially other regulation that turns inwards. This process is elaborated in chapter 4.

thought processes. In summary, Pinard (1986) focuses on metacognition as a deliberate self-regulatory activity, in which conceptualisation precedes external action. This kind of knowledge is internally regulated by internal as opposed to merely external feedback loops. Drawing from Piaget's (1977) model of 'prise de conscience' Pinard explains how metacognition, taking charge of one's self-regulation, can develop. What begins in external regulation turns inward, becoming effective self-regulation. Crucially, then, metacognitive development requires effective mediation. Inadequate mediation may lead to the underdevelopment of metacognition, resulting in ineffective self-regulation and consequent inability to solve particular problems effectively. Metacognitive control, however, is a necessary, not sufficient base from which to engage with solving ill-structured problems. A third and final level of cognitive processing is required, epistemic cognition (Strohm-Kitchener, 1983).

Epistemic cognition refers to the individual's ability to judge the limits of knowledge, to monitor the epistemic nature of problems and to ascertain the relative truth-values of various solutions before choosing the best solution to the problem being solved. Clearly, the ability to effectively apply epistemic cognitive processing to ill-structured problems is essential in generating solutions to these problems. Strohm-Kitchener uses this epistemic level of cognitive processing to explain how people solve ill-structured problems. Although developing later than the other two levels of cognitive processing, epistemic cognition should not be misunderstood as capable of substituting for the other two levels of cognitive processing; in fact, all three levels work in conjunction and are necessary for solving ill-structured problems. Moreover, different epistemic assumptions may underlie different people's approaches to solving ill-structured problems. Strohm-Kitchener (1983) shows that some people may believe that there is a right or true solution to an ill-structured problem. This epistemic assumption will influence how they solve that problem. Further beliefs

informing epistemic cognition are the belief that no objective knowledge exists (for example, a postmodern sceptical stance towards truth) and the belief that critical enquiry leads to knowledge (Harvey, 1989). This last belief, that critical enquiry leads to knowledge, is of course the epistemic assumption underlying problem solving in the Human Sciences. If these levels of cognitive processing are necessary for solving ill-structured problems, then learners engaged in studies in the Human Sciences (which are characterised by ill-structured problems) must be able to effectively utilise all these levels in order to engage with the university tasks they encounter.

Underprepared learners, deprived of adequate educational opportunities in the past, do not engage effectively with the tasks they encounter in the Human Sciences.

There is clearly a disjuncture between what learners bring to the tasks (their epistemic assumptions about how to approach knowledge) and the demands of the tasks (Bradbury, 1995; Craig, 1991). The differences between the demands of university tasks and learners' epistemic assumptions can only be appreciated by explicitly unravelling the demands of textuality, in which university tasks are embedded.

3.2.2. The epistemology of text: University ways of knowing.

Learners embarking on their first year of university study are confronted with a world that is essentially textually based (Bradbury & Griesel, 1994). Engaging in academic enquiry requires that one is familiar with the critical demands of textuality. Heterogeneous learning histories, however, result in learners with differing levels of familiarity (and consequently differing levels of preparedness) with textuality entering university. Particularly for underprepared students, whose prior schooling may not have effectively mediated their entry into textuality, engaging with university tasks presents challenges. These learners are inclined to view text as an authority; something fixed that closes, rather than opens enquiry. Consequently, these learners approach university ill-structured problems in the same way as they would approach

puzzle-like problems, as problems that have a single, knowable answer, which, once found, can close further enquiry. In the Human Sciences, however, textuality demands a critical stance to the text, viewing it as an invitation to open enquiry, rather than close it. Learners approaching text need to appreciate the implicit invitation to question contained within textuality (Lillis, 1997). It is essential that the nature of textuality be 'opened up' for these learners, facilitating their engagement with university tasks. In other words, the implicit demands contained within text need to be explicitly exposed, illustrating for learners that text demands a different kind of action from them than speech does.

Written text is very different from the spoken word. In a dialogical interaction, one can determine the meaning intended by the interlocutor by asking questions and receiving immediate answers. This apparent immediacy has meant that speech has traditionally been accepted as directly expressing meaning (intention) as the mind has immediate access to the concept or signified being expressed. Writing, on the other hand, is merely the sign of a sign, with no direct access to the signified, the meaning of a written text is uncertain or 'deferred' (Derrida, 1995). When interpreting written text, one cannot interrogate the text in the way one might interrogate a person in dialogue. Whatever the author's intention in writing this particular text, this intention is not fixed within the text, a transcendental signified, guaranteeing the meaning of the text for all time and in all contexts. Unlike the spoken word, written text can exist in the absence of its author; an autonomous entity, freed from the author's intention. The notion that distance is created between text and author is elucidated in Ricoeur's (1980) concept of *distanciation*, where meaning and intention are detached; that is, in written text, textual meaning no longer coincides with the author's intention. As if the absence of intention is not enough to risk the loss of meaning over time, writing can also be taken out of context and placed in a different context, changing its meaning. The very structure of written signs presupposes the possibility of written text existing

out of context; writing is essentially context free, capable of existing outside of the author's intention. Not only does writing create distance between the author and the text; it also creates distance between the author, text and reader (Ricoeur, 1981; Wood, 1991). Finally, writing distances the reader from his/her real world experiences, opening up new worlds of experience. Unlike speech, which requires that one be involved in the conversation, writing demands that one is capable of distancing oneself from the text. In speech, when one does not understand what is said, one merely asks the speaker for clarity. Conversely, given that text demands distancing, how does a learner derive meaning from text?

The task of learners embarking on their university studies in the Human Sciences is essentially interpretive, with learners required to (re)construct knowledge from a specifically textual form of knowledge. Interpreting or (re)constructing the meaning of written texts requires viewing knowledge as constructed, not something that is fixed authoritatively in text. Meaning does not reside in the text, but rather, must be constructed actively by the reader. Reading, in this sense, can be understood as a transaction between the text and the reader. The text opens up certain possibilities for constructing meaning; however, the reader brings certain understandings (or epistemic assumptions) to the text. Thus Iser (1978) contends that

in considering a literary work, one must take into account not only the actual text, but also, and in equal measure, the actions involved in responding to text. ... The work is more than the text, for the text only takes on life when it is realised, and furthermore, the realisation is by no means independent of the disposition of the reader-though this in turn is acted upon by different patterns of the text (274-275).

The meaning of written text, then, does not reside within the text, but rather between the reader and the text. However, the text limits the possible meanings that the reader can construct. The reader does not therefore merely subjectively decide meaning. Interpretation of text does not involve uncovering the hidden intention of the

author, then, but rather requires a transaction between the active reader, the understandings the reader brings to the text, and the interpretive limits (possibilities of meanings) delineated by the text. For Ricoeur (1981) the text opens up possibilities, releasing worlds of possible meaning, in front of the text, not hidden in the 'deep' structures of the text. Appropriating meaning from text requires that the reader enter the world of the text, distancing him/herself from the real world. The distanciation demanded (and produced) by text enables the reader to appropriate new meanings and understandings, which dislodge (or add to) previous understandings, or knowledge bases. Appropriation, then, should be viewed as counter to distanciation. Distanciation (which allows for the appropriation of new meanings and understandings), demanded by textuality, can be seen as "the condition of understanding" because, without it, appropriation would not be possible (Ricoeur 1980: 144). The interpretive task of the reader, therefore, requires distancing her/himself from both the world of the author and the familiar world that s/he inhabits; relinquishing the familiar in order to appropriate the text's meaning. This willingness to abandon the familiar in search of knowledge, Ricoeur (1980) calls "relinquishment of the self" (1980: 191). Effective readers are those who are prepared to step out of their world, approaching text with a questioning stance in order to 'open' up possibilities for constructing meaning. Text presents itself to us for questioning, but also requires of us that we be in question (Bradbury, 1997). Textuality then demands a critical, questioning stance to knowledge construction that is distinct from the questions posed in dialogue. Developing this critical stance is especially important in regards to academic text, and the specific textual demands inherent in academic literacy (Meyer, 1980).

The mode of knowledge construction in the academic arena is entirely textual in nature, necessitating that learners are able to appropriate meaning from text. Although all university learners are literate, in the sense that they can read, many

learners are unable to appropriate (or own) the knowledge contained within academic texts. We have noted that the meaning of a text is constructed between the reader and the text. If learners are literate why are they unsuccessful in their attempts to derive meaning from academic texts? This question must be answered by looking both at the nature of the texts that learners are familiar with as well as unravelling the demands of academic literacy. Most first year learners are familiar with fictional texts. In so far as they read at all, many readers prefer to read imaginative, as opposed to factual texts. Tannen (1982, 1984) has shown that imaginative texts differ substantially from intellectual academic texts due to their tendency to utilise features of spoken discourse. That is, fictional texts will often make use of direct quotations, or the present tense to involve readers in the unfolding story. According to Chafe (1982) the use of such features characterises 'Involvement', a necessary feature of spoken discourse. The divide between fictional texts and spoken discourse is therefore, not large. Fiction seeks to involve the reader in the unfolding scene with the use of rhythmic poetic devices (such as alliteration and assonance) or the use of quotation marks (to indicate speech) in much the same way that spoken discourse relies upon repetition or parallel constructions to involve the listener in the conversation (Tannen, 1982). Thus, features of discourse associated with speaking may be used effectively in fictional or imaginative writing. However, learners approaching academic texts with this frame of reference, will be disadvantaged in so far as academic texts do not encourage the learner to become involved in the unfolding discourse to the extent that fictional texts do. That is, academic texts do not appear to learners to invite appropriation as they contain few, if any, features of involvement evidenced in fictional texts. Further, if a learner attempts to appropriate meaning from academic texts in the same way that s/he appropriates meaning from fiction, the academic text may well be misunderstood. In order to appropriate meaning from academic text, the reader must bring the correct epistemic framework to bear on the text. Precisely because textuality occupies a central place within academia, learners view academic

texts as more authoritative and certain than other texts. Knowledge constructed by intellectual argument and contained within academic texts is viewed as objective and value free. Consequently, learners may approach reading for a degree in Psychology in a very different way to reading a fictional novel. Of course, academic texts do require that learners act on them in a different way to the action required for fictional texts, but not in the uncritical manner that learners appear to think. Fictional texts open up various worlds of possibility, which we may enter and leave as often as we pick up the novel. Conversely, the worlds opened up by reading Freud or Marx, appear (at least to learners) to beg no question. Consequently, learners approach academic texts as closed, or final answers, rather than viewing them as answers to which questions need to be generated; or viewing them as questions to which answers need to be sought. Learners, familiar with dialogical questioning strategies, are unable to adopt the type of questioning stance that text demands. Indeed, many learners are unable to appreciate the fact that deriving meaning from text depends upon viewing the text not as an end product (containing the author's final meaning) but rather as a process of enquiry. Viewing text as a process of enquiry requires that one appreciate the implicit questioning structure of text. The text is both a question and an answer; it poses a question (problem) which demands activity on behalf of the reader in order to arrive at the solution (answer); the text is also an answer, for which the reader must 'uncover' the question. Being able to interrogate text, to 'open' it up, then, requires that one view text as a process of enquiry, appreciating its questioning structure (Gadamer, 1975)

The first question implicit in the text is the author's question that the text answers. Learners must appreciate then, that the author wrote this text as an answer to a question s/he asked. The second question implicit in text is the further questioning that text provokes in the reader. Text opens up new worlds of meaning; new theoretical insights that invite one to question firmly held beliefs. By opening up new

worlds, texts disrupt our familiar understandings, giving us access to new, unfamiliar worlds. Access to this new knowledge in turn disrupts our familiar understandings, facilitating new understandings and progression to ever 'better' understandings². However, textual meaning does not extend indefinitely, eternally deferred in the absence of a transcendental signified (Derrida, 1995). Although text points to new knowledge, opening new worlds, it simultaneously constrains the kinds of questions that can be asked of it. Thus text constrains certain questions and requires others. For example, one constraint text places on readers' questioning is the inability to ask the text whether one's interpretation of it is correct. In dialogue, you can merely ask the speaker if your interpretation of their speech is correct. Text does not permit such questions. Thus interpreting text, we have noted, requires that the reader is capable of questioning text in very particular ways, appreciating that knowledge is actively produced through critical enquiry. Learners must essentially open up the text, viewing the text as both question and answer. It is this questioning stance or open reading which characterises the nature of knowledge construction in the Human Sciences and it is this critical epistemic assumption underlying academic literacy that distinguishes it from fictional texts (Meyer, 1980). The epistemology of text demands that learners approach text with the appropriate epistemic assumptions.

A consequence of this epistemic assumption is the critical understanding that reality cannot be known with absolute, unchanging certainty. Therefore, in order to effectively engage with the demands of textuality, one's cognitive actions on the text must be informed by the appropriate epistemic assumptions (Stroh-Kitchener, 1983). If, for example, one was to approach text with the epistemic assumption that the text contains timeless 'truths', one will have difficulty engaging with university

² It is this understanding of text as capable of shifting and changing understandings, provoking learning, which enables us to view text as capable of mediating meaning in the absence of a human teacher. This is the conceptualisation of text that informs the preparation of distance learning texts for Psychology 1, at the University of Natal, Durban.

texts. Many learners, equipped with the epistemic assumption that reality can be objectively known, tend to view academic text as a fixed 'truth' rather than an invitation to open enquiry, provoking questions. Consequently, although academic textuality demands that learners read text with this 'openness', most learners approach text as a final authority that will close enquiry because it is something in which the 'truth' resides (merely waiting to be uncovered). The critical demands academic texts place on learners are more stringent than the demands of ordinary texts, such as fictional novels or magazines. Moreover, Tannen (1982; 1984) has illustrated that even spoken discourse can contain features of language associated primarily with written discourse. This finding certainly suggests that, especially within the deeply literate, textually embedded university lecture hall, we may expect to find spoken discourse that is essentially textual in nature. With this in mind, the tutorial interaction, dialogically constructed between tutors and learners in the university context provides a particularly interesting space in which to conceptualise Tannen's (1982) findings. In academia, where all spoken discourse is deeply embedded in textuality, we can expect to find that tutors' spoken discourse is essentially textual, exhibiting features of written as opposed to spoken discourse. Therefore, although apparently non-textual conversations, tutorial interactions are very much textually based, requiring that learners' are able to engage with the demands of textuality. The textual basis of academic spoken discourse requires that learners approach tutors' and lecturers' spoken discourse *as if it were a text. That is, learners must appreciate* that the verbal text produced by tutors in a tutorial interaction needs to be 'read' in the same way as written academic text. Learners need to view the tutor's verbal text as an answer generated by a specific question. Consequently, learners who view tutorial discussions as conversations need to be made aware that tutorials and lectures are not conversations, but are, rather, verbal presentations of text. Clearly, the demands of academic textuality (both in written and in verbal text) need to be unravelled for learners, facilitating their engagement with university tasks and the development of

epistemic cognition necessary to solve the ill-structured problems that characterise academic endeavour.

In summary, learners engaging with academic texts need to be able to critically evaluate the knowledge contained within those texts, understanding that the meaning of the text must be constructed in the interaction between themselves and the text. This requires that learners view all university discourse (even apparently spoken discourse, such as lectures or tutorial interactions) as essentially textually based. The critical nature of academic textuality, therefore, needs to be 'opened' up for these learners, facilitating their engagement with university tasks. In other words, the very nature of textuality (so taken for granted by those immersed within academia) needs to be unravelled for learners. Moreover, the epistemic assumptions underlying learners' inability to adopt a questioning stance to knowledge construction also need to be unravelled. The different educational histories of learners at the University of Natal, requires an explication of underprepared learner's epistemic assumptions (informing their epistemic cognitive processing) facilitating a better understanding of the nature of underprepared learners engagement with university tasks.

3.3. A Commonsense epistemology: Learners' ways of knowing

Successful educational intervention requires knowledge regarding the kinds of epistemic frameworks that heterogeneous learners bring to university tasks. Given that epistemic cognition embedded in literate modes of thinking is required to effectively approach university, what epistemic assumptions do underprepared learners bring to the tasks they engage with at university? Craig (1991, 1992) proposes that learners rely on a commonsense epistemology in order to interpret university tasks. This commonsense epistemology is characterised by:

1. An acceptance that a central, defining truth (the Derridian (1995) transcendental signified) underwrites and 'grounds' all knowledge. Central principles are held to be absolutely guaranteed by appeal to an absolute authority, such as God.
2. This final truth can be found by gaining access to personal accounts of experience.
3. A reliance on linear story lines, where events lead naturally to a final, decisive 'truth'.
4. This final truth is incontrovertible, closed to any opposing evidence offered against it.

This then is the nature of learners' epistemic assumptions. Further, Feuerstein's (1980) elaboration of the characteristics of underdeveloped cognitive functions provides insight into underprepared learners cognitive processes. Feuerstein (1980) has developed several explanatory categories to reflect the nature of underdeveloped cognitive functioning. One category in particular has relevance for this study, 'blurred and sweeping perception' (Feuerstein, 1980:76). According to Feuerstein (1980), underdeveloped cognitive functions may be characterised by questioning strategies that are

blurred and sweeping...[indicating a] poverty of details or their lack of clarity, a poor quality of sharpness, an imprecise definition of borders, and an incompleteness of the data necessary for proper distinction and description (1980:70).

Failure to appreciate the critical demands of text, that is, failure to identify the question responsible for generating the text, leads to 'blurred and sweeping' perception (Feuerstein, 1980). This kind of perception is characterised by the inability to recognise the boundaries of knowledge set by the text. This results in the inability to focus on and select relevant information and disregard irrelevant information, indicating a learner's inability to effectively exercise metacognitive control. Bradbury (1995) points out that a predominantly 'African' worldview (relied on by

underprepared learners) impedes their understanding of the textually based (predominantly) 'Western' epistemologies confronting them at university. As these learners come from a predominantly oral cultural background and have consequently not deeply interiorised literacy, they impose these familiar ways of knowing onto the textual knowledge confronting them at University (Craig, 1991; Bradbury & Griesel, 1994). This hinders their ability to effectively engage with textual knowledge. Viewed in this way, underpreparedness can be understood in terms of Ong's (1982) argument regarding orality and literacy, which outlines the different cognitive demands of literate and oral cultures. Given that the nature of University knowledge is essentially textual, the ability to engage effectively with text, is not merely a handy skill, it is the requisite skill for embarking on an academic career. This is a world entirely steeped in literacy; from the lecture to the reference text, this is a world requiring an intimate familiarity with the written word. In order to engage effectively with tasks in this textual world, the learner must have interiorised the written word.

3.3.1. The psychological implications of Orality and Literacy

Given the importance of being able to make sense of this literate world, Ong's (1982) studies regarding the different modes of thought in oral and literate cultures provide insights into the possible effects unfamiliarity with literacy may have for those learners' modes of thought. For the purpose of comparison, Ong (1982) distinguishes purely oral from literate cultures. It is recognised, however, that no purely oral cultures exist today. Ong's studies, therefore, are used to highlight extremes between literate and oral modes of thought in order to provide a frame of reference in which to view learners who have not deeply interiorised literacy. However, a brief caveat is in order: to avoid any misunderstandings, which could lead to an ideological claim for the superiority of a literate mode of thought, it must be made clear that the focus of Ong's work is on the difference in cognitive performance between oral and literate

cultures, and should not in any way be 'stretched' to incorporate an argument for differential mental capacities³.

Ong (1982) identifies the following characteristics of oral modes of thinking (Bradbury & Griesel, 1994):

1. Formulaic and conservative; in a world where knowledge cannot be 'fixed' in an external text, in order to remain in tact across time it must be essentially conservative.
2. Aggregative as opposed to analytic; redundant; and additive rather than subordinate; essentially lacking hierarchical structure.
3. Situational rather than abstract; close to every day human experience; empathetic and participatory as opposed to distanced; and agonistically toned; knowledge in an oral culture must be practically valuable in specific situations.

Literate modes of thought, on the other hand, are:

1. Analytic and hierarchically structured.
2. Open as opposed to conservative.
3. Distanced from everyday experience; by enabling the literate person to externalise and 'fix' their thought on a page, writing objectifies thought, abstracting it from everyday experience (Bradbury & Griesel, 1994). It is in this sense of creating an 'autonomous' text, one that can exist in the absence of it's author, that Ricoeur's concept of 'distanciation' in writing as the "intentional exteriorisation" of thought, is particularly useful (1980: 13).

3.3.2. The cognitive demands of Orality

According to Ong (1982) an oral culture is one in which its members have no reference at all to any visual text. This is an important definition as it highlights the

³ Where 'capacity' refers to a universal human capacity for thought, which is common to all humans cross culturally. 'competence' refers to the situational and contextual performance of thought and expression (Piaget, 1977)

fact that orality (as defined by Ong, 1982) doesn't refer simply to a culture based on verbal utterances, it refers to a culture in which verbalisation is the only means of transmitting thoughts and ideas. Orality then, does not refer solely to verbalisation, it refers to a complex mode of thought based on what Ong calls a 'verbomotor lifestyle' (Ong, 1982). A verbomotor or oral culture is one that is word-oriented and sound based. Words have no way of being permanently fixed in time and space in the absence of a visual text. In a word-oriented, sound based culture, actions and attitudes, as well as thought processes depend on the effective use and transmission of words in an interpersonal context. Based on sound, which is perishable, the oral word has none of the permanence that literates take for granted. In an oral culture, words are not discrete units or visual entities, rather they are events. Speech, then, is a mode of action that unites members of the community in the joint construction of knowledge. The modes of thought and expression and resultant knowledge base (or epistemology) characteristic of an oral culture, follow from the fact that it is a word-oriented, sound based culture.

3.3.2.1. Formulaic and Conservative

The perishable nature of spoken words has implications for how knowledge is conceptualised and retained over time. In order to know something, we have to be able to process and organise our perceptions into units of information that can be easily recalled correctly over time. In the absence of writing systems, nothing fixed exists outside the thinker to help him/her remember complex pieces of knowledge over time. Therefore, one essential ingredient for remembering correctly is to communicate your thoughts in the presence of one or more interlocutors. The interlocutor, as he/she is involved in a conversation with you, is able to assist you in recalling pertinent facts as well as helping you sustain the conversation (and consequently your thought). Further, to aid recall, thought must be patterned in rhythmic, balanced repetitions, in formulaic expressions like proverbs or other

rhythmically balanced fixed expressions that are easy to remember and retain. Thus in an oral culture, formulas and rhythmic patternings form the very substance of thought. The only way that thought can exist in an extended form or be recalled with more than merely relative validity in this culture is by means of these memory aids. In an oral culture in order to be authentically retained knowledge must be repeated aloud so that it is conserved and is easily transmitted to other community members. This conservative nature of knowledge inhibits intellectual experimentation. By externalising knowledge, writing frees the mind from the arduous task of memorising, allowing it to engage in the search for new and original knowledge. This does not mean that oral cultures lack originality of thought, however, in an oral culture originality doesn't lie in the ability to construct new stories but rather to tailor old stories creatively to new scenarios.

3.3.2.2. Aggregative, redundant and additive

Given the mnemonic requirements of thought in an oral culture, narration tends to be additive rather than subordinate, as meaning depends more on the existential context of the story than on linguistic structure. The fluidity of oral discourse further encourages aggregative, as opposed to analytic, discourse. The aggregative nature of oral discourse serves to keep formulas (so essential for thought and memory) intact. Analysis and analytic thought entails the ability to dismantle discourse, to break expressions up into discrete units in order to analyse them. In an oral culture, any attempt to dismantle expressions would be disastrous. In the absence of writing systems, breaking up expressions would inevitably lead to the loss of formulas and consequently the knowledge contained within them. As there is nowhere outside the mind to store these formulary expressions, they must be kept intact in order to be easily and accurately recalled for posterity.

As no visual text exists outside the speaker in an oral culture to provide thought with continuity and consistency, repetition and redundancy (of expressions) enables both the speaker and listener to follow the same train of thought. Redundancy (in the form of repeating what one has already said) characterises oral speech and thought. In the absence of writing it is easier to follow a train of thought if the premises are continually repeated and reinforced. In fact, repetition of speech and thought is more natural than linear thought provided by writing systems, which encourage analytic thought. A further consequence of knowledge being embedded in lived experiences is that one must be able to empathetically identify with the object of knowledge in order to become familiar with it.

3.3.2.3. Situational, empathetic, agnositically toned

As knowledge exists in lived experience, in daily life where humans struggle with one another; orality situates knowledge within the agonistic context of this struggle. The narrator does not objectively state dry facts; rather s/he becomes the conduit through which the past is made present. The words used have a meaning that is related to their direct usage in present situations. So, in an oral culture, thought and expression are related to the present lived situation rather than to abstract thinking. To say that individuals in an oral culture think situationally, as opposed to abstractly is not to say that they don't think conceptually. All conceptual thinking is abstract, in the sense that a concept symbolises a sensible object in its absence. However, in an oral culture, concepts tend to be used in situational and operational frames of reference that remain closely related to human experience. Conceptual thinking in an oral culture is characterised by thought in terms of action (Luria, 1976).

Moreover, oral cultures tend to utilise a different form of logical reasoning to literates (Luria, 1976). Literates predominantly favour the use of deductive reasoning where the conclusion follows directly from a set of premises in a self contained syllogistic argument. Now, a syllogistic argument is best understood if presented in a

written form, because a syllogism is in fact a self-contained text. Even when one verbalises a syllogism, the very form of the argument is constructed in a structured textual manner. It will be argued later that for deductive logic to be useful a literate mode of thought, which is capable of inferring literal meaning from statements, is required. Oral individuals do not use deductive reasoning because it is not useful; it has no operational value. Of course, the fact that oral individuals do not reason deductively does not imply that they are illogical or prelogical. Being human, they certainly use logic, but only logic that is useful to them. For example, without the expert use of inductive logic, they would have no way of knowing when to sow or reap their harvest; how to judge the change of seasons or infer anything from their surroundings. In deductive logic, there is nothing beyond the words; conclusions derive solely from the premises. In an oral culture, based as they are in situational and practical thought, one goes beyond mere words to ascertain conclusions and solve problems. One needs knowledge of the practical nature of the problem under discussion, not abstract premises. It follows from the practical nature of thought in an oral culture that they have no need to explain or define the common concepts they use. A real life setting is more appropriate to defining a concept like 'tree' than abstract definitions.

Finally, Luria (1976) found that individuals in an oral culture tend to have difficulty articulating self-analysis. Self-analysis requires the ability to distance or remove oneself from the situation of lived experience in order to introspect. Literates, removed from situational thought, can easily introspect and develop theories of the 'self'. However, in an oral culture, based as it is in communication and interpersonal relationships, the external features of a person as opposed to the internal features command attention. One's personality is judged externally by the group, not internally by the individual. From Ong's (1982) discussion on orality it appears as if oral cultures do indeed have a different mode of thought to literates. This has obvious

implications for those learners relying on oral modes of thought, who approach university tasks from this epistemic background. Learners who rely on a commonsense epistemology to inform their engagement with text are unable to engage with the demands of textuality, provoking a disjuncture between what learners know and are capable of doing and what the task requires them to be able to know and do. In order to appreciate the disjuncture between learners' ways of knowing and university ways of knowing, we need to ask what kind of knowledge confronts the new student on his/her first day at university by interrogating the demands of literacy.

3.4. The cognitive demands of Literacy

Literacy as defined by Ong (1982) is a text-based mode of thought, which allows for abstract categorisation, formal deductive reasoning, objective thought and articulated self-analysis. Literacy is more than the ability to read and write; it refers to a culture wherein writing has become internalised to the degree that it affects thinking processes. A literate person, once s/he has interiorised writing, speaks and thinks in a literate way, that is, organises their verbal expression in thought patterns and verbal patterns that they would not possess unless they were literate. In a literate society, children grow up immersed in textuality, in literate modes of thinking. Literacy is therefore, a social practice, embedded in and mediated by specific socio-historical contexts (Cook-Gumperz, 1986). School, a social space defined by discourse and activity, reinforces literacy and extends the primacy of text (Bourdieu, 1991 cited in Carrington & Luke, 1997). Text itself mediates meaning in a literate society as ... there are transactions between the reader and the text in which the reader is continuously solving new problems and building and extending psycholinguistic strategies. Through these transactions, text serves to mediate the development of reading and writing (Goodman & Goodman, 1993: 326).

Confronted with text the reader must act on it, developing if necessary, new strategies for solving the problems one encounters with text, pushing the reader towards solving problems, text can itself provoke learning in the ZPD. "Transactions with written texts provide the problem situations that readers need to deal with. During these transactions texts become mediators as the reader takes control of learning" (Goodman & Goodman, 1993: 340-341). A literate person then, is someone whose thought processes are not simply natural, but are structured by the use of a technology, writing.

Writing is not a natural activity in the same way that speech is. It is artificial in a way that speech cannot be. It is a technology, which requires the use of tools such as pens and paper. By providing us with the technology needed to distance ourselves from our natural surroundings in order to understand our world from an objective viewpoint, writing heightens consciousness. The technological use of writing allows literates to create new forms of culturally based psychological practices (Vygotsky, 1978). Once writing is interiorised it becomes part of a literate's higher psychological processes, organising and integrating aspects of a literate's behaviour, such as problem solving, memory and self-perception. The internalisation of an external, artificial mediator of thought, such as writing, transforms consciousness. Interiorising this technology requires that we make writing a psychological part of ourselves. Given this, it is misleading to view literacy as a merely mechanical motor skill. Writing is a literate's language. Even the spoken word in a literate culture is structured by literacy. Being literate then, implies a certain mode of thought, which is organised and integrated by writing.

Writing is not simply an extension of speech; it moves language out of a purely oral-aural world into the sensory world of vision by representing words as fixed visual entities, which can exist in the absence of speaker or listener. This move from sound

based to visually based words, transforms speech and thought. To this end, the alphabet is of major psychological importance because it truly transforms the spoken word from sound to sight (Olson, 1996). The alphabet represents sound itself as a thing, fixed on a page, to be analysed in the present and to have quasi permanence in the visual world of space and time as opposed to existing merely in the aural world of time. The literate child learns to 'hear' words in terms of the letters of the alphabet. Learning to read requires the discovery of how writing relates to speech not vice versa. Once children know their alphabet they tailor their speech to correspond to the letters they have learnt. Literates analyse their speech in terms of the categories offered by the writing system. Writing enables the child to hear speech as composed of discrete letters represented by the alphabet. Thus the alphabet provides a model (a set of forms and sounds) allowing children to analyse their speech in terms of how sounds of words correspond to the names of known letters. In this way, the writing system provides a model for thinking about the sound structure of speech.

Writing gives rise to a unique mode of thought, characterised by the ability to analyse discourse into discrete units and objectively analyse the logical properties of this discourse. Being literate enables us to form unique ways of perceiving reality by facilitating the formation of concepts about language that are essential to the development of scientific modes of thought. Visual, text based modes of thought free the literate mind from the memory requirements, which determine orally based modes of thought. Note however, that the use of different models for representing language to consciousness does not imply that one mode of thought is superior to the other. By separating the knower from the object of knowledge, writing facilitates introspection, allowing us to see ourselves as distinct from the world and to create new discourses about ourselves by providing us with new horizons of meaning (Olson, 1996).

In an oral culture, meaning is context based and thrives on the use of metaphor. There is only one way of taking meaning in an oral culture. Writing, however, provides literates with two ways of interpreting a statement, either literally or metaphorically. The autonomous discourse facilitated by writing enables meaning to exist free from the existential context and in the discourse itself. Literal, word for word meaning provides the basis for universal understanding and scientific understanding. The notion of the fixity of words provided by reading and writing enables thought to reflect a new consciousness of the semantic properties of language. Knowledge of the actual linguistic meaning of statements has implications for the development of a literate mode of thought which favours the deductive use of logic, which is needed to prove the validity of syllogistic arguments. Deductive logic, so necessary for scientific explanations, derives from literal meaning. "Logic and literal meaning seem to be mutually defining" (Olson, 1996: 149). Awareness of actual linguistic meaning gives literate discourse the clarity and formality distinctive of modern science and the distinctive mode of analytic, abstract thought which scientific discourse entails. Literacy brings the form of an expression (the literal meaning) into consciousness. Thus literacy provides a model for bringing distinct aspects of language to consciousness. This does not of course imply that reading and writing are the only activities, which bring language into consciousness. Oral cultures use different models to represent language to consciousness, such as formulaic recall. However, the literate ability to conceive of sentence meaning as either literal or metaphorical provides literates with two horizons of meaning. Ong (1982) concludes that orality and literacy provide individuals with different ways of thinking. This conclusion, however, is controversial and Ong has been severely criticised for his work.

According to Street (1984), orality and literacy aren't as clearly defined as Ong would have us believe. In fact, oral practices are embedded in literate cultures, we mix orality and literacy. Street points to the events within a university, a prime

example of literacy, such as lectures and seminars, which include orality and literacy. This surely indicates a misunderstanding of Ong's entire distinction between orality and literacy. Further this critique seems to have blurred the meaning of orality to suit its own ends. Ong's definition of orality indicates that it is not synonymous with verbalisation. Certainly a university student take notes in a lecture and certainly the lecturer addresses students verbally. However, this is a literate not an oral context. Orality, as defined by Ong is clearly not merely a verbal exchange. It is a way of thinking in a society that has no access to literacy. In a university situation, the context of exchange and enquiry is literate, based in text. A lecture is a verbal presentation of a text. Ong's focus is not on the modality of expression (that is speaking versus writing) but rather on what the cognitive implications of literacy and orality are. However, given the possible ideological implications of acknowledging differences, especially in a country like South Africa, which is trying to overcome a disastrous history predicated on the segregationist ideals of difference, one can appreciate Street's (1984) concern that Ong's work might lead to claims of literates intellectual superiority. However, such critiques fail to appreciate that Ong's discussion regarding the different cognitive performance between oral and literate cultures does not have ideological implications for recognising one culture as superior to the other. This follows from the fact that Ong discusses the differences in cognitive performance between cultures and makes no mention about different cognitive capacity. Everyone, regardless of culture and socio-historic context, has the same cognitive capacity. How this capacity manifests itself, however, is a function of particular societies at particular times. Moreover, recognising difference does not (as these critics appear to think) automatically imply the superiority of one culture over another. Not all critics fall into the trap of misunderstanding Ong's findings, however. Scribner and Cole's (1981) studies into Vai literacy practices (although not intended as a critique of Ong) have provided an interesting critique regarding the cognitive implications of literacy.

Scribner and Cole (1981) point out that although language is a universal symbolic system shared by all humans other culturally specific symbolic systems (such as differences in Vietnamese and English literacy practices) introduce differences in thinking across cultures. Essentially, they point out that claims regarding the implications of literacy cannot be made, as these effects could well be the result of schooling. Undoubtedly, schooling has effects on thinking. Ong's (1982) argument regarding literacy must actually imply this given the fundamental role schooling plays in developing literacy. A child born into a literate world, surrounded by literate others (whose thoughts are already structured by literacy) is already being immersed in literacy. Schooling extends this, providing the space in which the written word becomes internalised by the child (Cook-Greuter, 1986). As a school is an entirely literate space in which a child learns to read and write, internalising a new technology, certainly the effects of schooling cannot be separated from the effects of literacy, one must surely imply the other. Although Ong (1982) does not address the cognitive effects of schooling, or discuss the cultural capital proficiency in English literacy contains for those who strive towards upward mobility, his study does powerfully point to the effects technology, once interiorised, can have on cognition.

It appears, then, that orality and literacy facilitate the use of different modes of thought. Ong's investigation of these differences is controversial as it appears on a superficial reading to conflate the effects of schooling and literacy as well as endorsing an ethnocentric claim for the superiority of literate modes of thought. However, a closer reading of the text highlights the fact that the differences between oral and literate cultures are only superficial. Further, it's not necessarily a truism that recognising difference automatically implies a value judgement. Some theorists like Taylor (1991) would even argue that humanity's failure to recognise difference has dire consequences for justice in a multicultural society. Ong's discussion regarding literacy and its psychological implications highlights the fact that

technology, once interiorised structures our cognitive processes in certain ways. It is this conclusion that informs this research.

3.4.1. The epistemology of text versus a commonsense epistemology.

Effective engagement with the textual demands of academia requires that learners have deeply interiorised literacy, enabling them to engage in academic enquiry and appreciate the essentially textual basis of even apparently spoken discourse, such as lectures and tutorials. Reliance on a predominantly oral background has resulted in underprepared learners applying a commonsense epistemology to university tasks, resulting in a disjuncture between learners' level of preparedness and the level required for successful engagement with university tasks. Reliance on a commonsense epistemology is characterised by a closed, rigid, authority seeking approach to textually based knowledge (and consequently, to university texts, be they lectures or prescribed readings). Conversely, the kinds of problems studied in the Human Sciences are by their very nature, ill-structured. There are no final 'truths' here; no fixed knowledge, guaranteed for all time by the authority of some transcendental signified (call it 'God', the final author). Relying on their commonsense epistemology, these learners are unable to critically engage with the kind of tasks set for them in the Human Sciences. Questioning for these learners becomes a search for the 'truth'; the text (or the tutor's answers to questions) becomes the final right answer. No critical engagement with the text is entered into (Craig, 1991). All questioning appears directed to confirming existing experiential knowledge (Craig, 1991). Unfamiliarity with the demands of textuality leads underprepared learners to ask open questions that exhibit features of 'blurred and sweeping' perception, highlighting their inability to select relevant information from the text, hindering their engagement with academic enquiry. Conversely, the epistemology of text demands that learners approach text with a critical questioning stance, viewing knowledge construction as the product of critical enquiry and

appreciating that all knowledge is contextually relative. The epistemology of text demands that learners distance themselves from experience in order to appropriate meanings from the text while a reliance on a commonsense epistemology leads learners to seek to ground knowledge in real life experiences.

The student relying on a commonsense epistemology is unable to engage in the decontextualised theoretical debates characteristic of university study. The text is approached as a self-evident authority, not as a problem upon which one must act in order to generate solutions. The mediational opportunities of this text, then, are lost on these learners. However, this lack of critical ability when approaching textually based forms of knowledge does not lead to the conclusion that such learners are unable to reason critically in their everyday lives. What is at issue here is a lack of familiarity with very specific textually based forms of knowledge (Ong, 1982). The ability to critically approach texts requires the ability to pose effective questions. Every text is an answer for which the reader must devise the appropriate questions in order to enter the textual world. A reliance on commonsense epistemology does not provide learners with the requisite questioning ability needed to engage in academic enquiry. The world of the text is not one of daily experience; it transcends time and space, opening up amazing possibilities, experiences not known, realities beyond our own daily lives. The challenge (a frightening one) is to relinquish one's hold on the here and now and step into the unknown, uncertain possibilities offered by the text. Learners subscribing to a commonsense epistemology, which demands empirical proof founded in personal experience and guaranteed by appeals to absolute authority, will be unable to engage with theoretically decontextualised university tasks which have no immediate relevance to their daily lives.

3.5. Concluding comments:

To conclude, the epistemological discourse which characterises university ways of

knowing is not shared by underprepared learners whose learning histories are more embedded in an oral rather than a literate culture, in which literacy has been deeply interiorised. Consequently, these learners rely on a commonsense epistemology when approaching university tasks. It is not that these learners lack the requisite capacity to engage in academic enquiry, rather, their unfamiliarity with the demands of textual analysis leads them to approach such enquiry ineffectively. Clearly their access into the world of textual knowledge needs to be effectively mediated.

Awareness of the underprepared learners' inappropriate epistemic assumptions, unfamiliarity with textual analyses and inadequate metacognitive processing abilities (and consequent need for mediation) have informed the Psychology Department's academic support programme currently run at the University of Natal Durban.

Although apparently reliant on spoken discourse, these tutorials are in fact deeply based in textuality, with tutors using speech containing many features of written discourse (Tannen, 1982). The help-sessions run daily in the psychology department, provide learners with the opportunity to ask questions regarding their work, providing opportunities for mediating learners' access into university 'ways of knowing'. By providing 'scaffolding' (or assistance aiding the learner to attempt tasks s/he is unable to complete unassisted) in the form of these sessions, the tutor attempts to mediate effective metacognitive controls to the learners, changing them in the process. The nature of mediation and its potential for serving as a learning-teaching tool are discussed in chapter 4.

4. MEDIATING MEANING: A FRAMEWORK FOR QUESTIONING

4.1. Introduction

Miller (1989b) has elaborated the paradoxical nature of learning by pointing to the Meno paradox, which states that:

A man cannot inquire either about that which he knows, or about that which he does not know; for assuming he knows he has no need to inquire; nor can he inquire about that which he does not know, for he does not know about that which he has to inquire (Miller, 1989b:155).

In chapter 3, we noted that learners, unfamiliar with the demands of textuality and consequently, ill equipped to engage in academic enquiry, need to be shown how to engage with textuality. What the learning paradox highlights, however, is that learners who do not know how to engage with tasks, will not know that they don't possess the requisite knowledge for engaging with the task. Consequently, they will impose familiar, often inappropriate, epistemic frameworks on university texts in their attempts to appropriate meaning for themselves. How then, can tutors facilitate learners' access to university tasks? The learning-teaching paradox indicates that traditional teaching methods (where the teacher directly transfers information from her head to the learners) will not be effective. If a learner already knows how to engage with tasks, there is no need to teach them anything. If the learner does not know how to approach a task there is really no foundation for teaching, given that communicating meaning requires at the very least a level of shared understandings (Miller, 1989b). As many learners embarking on their university career are unable to effectively engage with university tasks because they bring inappropriate epistemic assumptions to bear on academic texts, we need to find some way out of this learning-teaching paradox, facilitating learners' engagement with text. In chapter 4 we discuss the notion of mediation highlighting how mediated learning provides a solution to the learning-teaching paradox, illustrating how action must precede understanding for real learning to occur (Bradbury, 1995; Bradbury and Zingel, 1989;

Cazden, 1986; Miller, 1989b). The particular focus in this chapter is on how tutors can mediate learners' access to academic enquiry.

4.2. Vygotsky and the Zone of Proximal development

A fundamental premise of Vygotskian theory is that basic biological (or 'elementary') processes are transformed into higher cognitive functions through the use of culturally meaningful tools and signs (such as language) during social interaction (Vygotsky, 1978). That is, children are born with certain basic, biological processes, such as for example, perception and the potential for eidetic memory (Diaz, Neal & Amaya-Williams, 1993). As the child develops within their social world, these elementary processes are transformed by the child's interaction with his/her social world. Higher cognitive functions develop first as interpsychological functions, with (m)other initially guiding the child's activity, and later 'turn inward' becoming intrapsychological functions. Thus it is the (m)other who originally mediates the child's activity and externally regulates the child's interaction with his/her environment (Moll & Greenberg, 1993). However, what begins as external regulation or social regulation, turns inwards and becomes self-regulation. Higher cognitive functions, then, have social origins. The nature and quality of early mediation is therefore crucial in the development of higher cognitive functioning and, relatedly, self-regulation. In Vygotskian theory (1978) self-regulatory capacities develop when the child can actively manipulate its environment with the use of signs. Initially language (the most useful symbolic tool) is social, used by the (m)other to mediate social interaction. In its external role as social communication, language is used by the child to negotiate his/her environment. However, what begins as external communication, becomes internalised, as self-regulation helping the child to plan and monitor his/her actions.

It is in this conceptualisation of language as serving a regulatory function, controlling higher cognitive functions that the relationship of language to thought needs elaborating. It is here that language may be viewed as a symbolic tool, enabling us to act on our world in certain ways. This understanding of language enabled Vygotsky (1978,1986) to develop a theory of cognitive development that accounts for how an individual becomes socialised and how the social becomes internalised as part of the individual's mind.

4.2.1. Mediating Thought: Language, questioning and metacognitive control

For Luria (1976) and Vygotsky (1986) language is responsible for the development of uniquely human behaviours. Unlike animals, which have no recourse to symbolic tools to enable them to solve problems, children use language in their problem solving activities. Faced with a difficult problem, children will use language in order to attain their specific goal; that is, children speak to themselves when attempting to solve difficult problems. This observation led Luria (1976) and Vygotsky (1978) to conclude that speech organises activity. Initially, speech is external with the child talking aloud in order to solve problems, explore the environment and regulate behaviour. Questioning is one of the most important instruments that the child can use to explore their surroundings (Lindfors, 1987).

In order to familiarise him/herself with his/her surroundings, the child verbalises questions, addressing them to adults who can answer them. The ability to ask questions in order to gather information enables the child to gain control over his/her understanding of his/her experience. Thus external speech aids problem solving by enabling the child to regulate his/her behaviour with the aid of a symbolic tool, language. Of course, the child does not necessarily question an adult; if no adults are available, the child may ask questions to which s/he provides (or actively seeks out) the answers. So, questioning may involve expressive speech as well as 'inner

speech', in which the child questions him/herself (Luria, 1973). As with all higher cognitive functions, then, speech's role as regulator begins interpersonally (serving an interpsychological function), before turning inwards in order to serve an intrapsychological, self-regulatory function (Vygotsky, 1986). Once interiorised, language begins to organise all higher cognitive functions, enabling us to plan and direct our actions (Luria, 1973). It is this notion of internalised speech serving a self-regulating function that Pinard (1986) refers to as metacognition (Chapter 3 page 43). For Pinard (1986) metacognition entails both metacognitive control over a task, that is an understanding of the task's demands, as well as control over one's self, or self-regulation. Thus metacognitive control entails both knowing how to approach a problem solving task as well as being able to theorise or provide reasons for selecting particular solutions. In chapter 3 we discussed how crucial metacognitive control is to approaching university tasks. Actively attempting to engage with tasks, without grasping the task demands, or what it is 'about', will be of little use to the learner. Questioning provides learners with a 'tool' that they can actively use in order to make task demands explicit. However, simply questioning the content and form of the task is not sufficient to facilitate learning in the student. In order to appreciate the meaning of the task, the learner must be able to appreciate his/her 'self' in relation to the task; that is, the learner must be aware of why s/he acts on the task in specific ways (Miller, 1994). So, in order to act on university tasks the learner must be aware of the context in which that action takes place (giving meaning to that action) and the kind of action they are engaged in.

When faced with university tasks, learners must be able to ask questions about the content of the task as well as asking questions about the form of the task. In order to construct knowledge for themselves, learners must also be able to reflect on and regulate their own mental actions. The first type of questioning, enquiry about content, is a first level type questioning to explore the task's content (Strohm-

Kitchener, 1983). The other two kinds of questioning (questioning the form of the task and the relation of 'self' to the task), however, operate at a metacognitive level, in relation to control over the task demands and regulation of one's mental actions (Pinard, 1986). We have noted that the very structure of knowledge construction in the human sciences requires a critical stance in relation to the ill-structured problems characteristic of these disciplines (Strohm-Kitchener, 1983, Bradbury, 1997). Thus, the form of the tasks facing learners in the human sciences requires that they are able to appreciate the open-ended nature of knowledge construction, and, consequently, develop appropriate metacognitive questioning strategies for interrogating these task demands. From this discussion, we are now in a position to regard questioning as an effective cognitive tool enabling the learner to explore the unfamiliar task (both its content and form) and regulate their mental actions (Bradbury, 1997; Pinard, 1986).

In summary, then, language provides the developing child with the verbal ability to explore their environment. Questioning is, arguably, the most important linguistic tool that the child uses to explore their surroundings. As a cognitive tool, questioning enables the learner to probe the unknown and to reflect on and regulate his/her mental actions in relation to the unfamiliar task. As questioning underlies the very structure of academic enquiry in the Human Sciences, the ability to question and appreciate the open-ended nature of knowledge construction in the Human Sciences is essential to any learner embarking on their university career. The challenge facing learners (and consequently educators) is the development of a critical stance (and the self-regulatory abilities it presupposes) to knowledge construction. The understanding that self-regulation crucially depends on mediated learning experiences, points not only to possible reasons for differential self-regulatory capacities in approaching university tasks evidenced by some learners, but also

provides a 'space' for educational mediation and intervention: the zone of proximal development (Vygotsky, 1978, Feuerstein, 1980).

4.2.2 Instruction in the ZPD

Given this research's specific focus on questioning, Vygotsky's (1978) conceptualisation of the Zone of Proximal Development (ZPD) as that 'space' in which instruction and learning can fruitfully occur provides a framework for understanding educational intervention. In his critique of traditional approaches to learning and development, which relied predominantly on assessing mental performance by using static methods such as IQ tests, Vygotsky (1978) introduced the notion of a 'zone' of potential. He emphasised that static measures merely tested mental processes that had already matured, giving no real indication of the child's actual potential. Developing mental processes needed to be assessed through collaborative as opposed to independent activities (Tudge, 1993). Vygotsky (1978) proposed that what children could do in collaboration with others today, they would be able to do independently tomorrow. In other words, the child performs, or acts, before they are completely competent. As Cazden (1986) says, "performance before competence" (425). The zone is clearly social, highlighting the "interdependence of the process of child development and the socially provided resources for that development " (Valsiner, 1988: 145). The zone can further be understood as the logical extension of Vygotsky's experimental-development method.¹

As Vygotsky's interest was in studying the development of processes, as opposed to fossilised behaviours, his method aimed at externalising developmental processes, by presenting subjects with problem solving tasks that they could not solve using the skills they had. Offering the subjects new 'tools' (or stimuli), Vygotsky would then study how subjects would construct new means to solve the problem. In this way, the

experimental-developmental method aimed at making "hidden processes" visible. Conceptually, the ZPD is a logical extension of this method, then, in that it too seeks to make hidden processes visible. Moreover, the ZPD represents a truly social concept; a move in Vygotskian theory from focusing on sign-mediated actions to socially mediated actions (Moll & Greenberg, 1993). This 'move' into socially mediated activity should be viewed in conjunction with the significance of tool and sign mediation, adding a broader social dimension to Vygotsky's (1978) developing theoretical system, providing an essential 'space' for educational intervention (Hedegaard, 1993).

Gallimore & Tharp (1993) suggest 6 means of teaching by assisting progress through the ZPD. These 6 means of teaching through assistance in the ZPD highlight how instruction can usefully provoke learning in the ZPD, pointing to possibilities for educational development within the zone.

1. Modelling: The tutor (teacher) should model appropriate learning actions for learners to imitate. In the instance of university tasks, tutors should model how to enquire, demonstrating how to ask appropriate questions.
2. Contingency management: A reward (such as praise, or for a school child a gold star) or punishment (for example, reprimanding learners for not doing their work) should directly follow behaviour.
3. Feedback: Verbal and written feedback to the tasks provide a model for the learners, both in terms of demonstrating what a 'good' answer should look like as well as modelling the cognitive moves required to reach the answer. This should attempt to scaffold for learners how to approach tasks.
4. Instruction: Effective instruction is embedded in a context with other effective assistance means, such as encouragement and feedback.
5. Cognitive structuring: Especially where learners are unfamiliar with the task, the mediator must provide the structure for thinking and acting, scaffolding/

¹ This method is discussed in chapter 5.

organising the learners' experience. Such assistance may be providing for grand theories for students to approach their work, or simply naming and defining concepts. Essentially this assists the student to process 'raw' data, all the facts, helping him/her to sift through them, providing a framework for interacting with the text.

6. Questioning: University study is predominantly text based. The academic arena that learners enter when they embark on their university studies represents a domain of knowledge construction in which textuality has become so deeply interiorised that even the seemingly verbal presentation of a lecture is itself a text, needing to be read and interpreted. It has been noted (chapter 3 page 45) that textuality, especially in academia, demands that learners adopt a critical or questioning stance to knowledge construction. Thus learners must approach text actively, as something that must be read and questioned in order for knowledge to be constructed. Developing a critical stance towards knowledge construction is one way in which questioning can aid learners' progress through academia. Many learners, however, relying on a commonsense epistemology need assistance in developing critical questioning strategies in relation to text. As many of these learners are familiar with asking questions in dialogical interactions, they tend to rely on this familiar questioning style. Dialogical questioning, however, is very different from the kind of critical questioning that academic enquiry demands. In dialogue, a learner asks a question and receives an immediate response from the teacher. Dialogical questioning, then, can actually close enquiry in an answer. Academic enquiry, however, demands that enquiry be opened. Hence, in order to appropriate meaning from textually based knowledge, one must be able to ask open questions, questions that facilitate enquiry, rather than ones that close enquiry. In the university, the tutorial context provides learners, who are unable to engage in critical academic enquiry, with the opportunity to ask questions in a dialogical interaction. In dialogue, the tutor can model for learners how to

approach textual knowledge, demonstrating the kinds of questions that one needs to ask to open enquiry. Especially where learners are ill equipped to deal with the demands of textuality, tutorial dialogue can facilitate learners' access to text. However, the tendency that dialogical questions have to close, rather than open enquiry is problematic. As learners need to learn open questioning techniques, the dialogue constructed within tutorials must provide learners with a model for opening enquiry. One way of doing this is to sustain the learner's question by not directly closing enquiry in an answer. Dialogical questioning, then, does not necessarily close enquiry. Therefore, in order to facilitate learners access to textuality, assistance is offered in tutorials, where learners are encouraged to question tutors in order to gain understanding. In tutorials, then, learners may question tutors about the course content in order to clarify their understandings. In this way, the dialogical interaction between learners and tutors can facilitate learners' engagement with textuality. So, tutorials provide the dialogical space for learners to ask questions, with tutors' questions and answers modelling how to approach text. This dialogical question and answer interaction is a first order mediation, with the tutor mediating learners' understanding of text. Further, as mediation in tutorials involves instruction in the learners' ZPD, tutors frequently construct verbal texts for learners to 'read'. These texts are selective reconstructions of the written text. The tutors' familiarity with the demands of textuality, enable the tutors to select relevant information from the written text and verbally reconstruct that text for learners. Hence, the verbal text tutors' generate is a reformulated version of the written text. Although a more condensed version of the written text, the tutors' verbal text is still a text, requiring that learners' view it as an answer to which they must generate the appropriate questions. Unlike written text, however, the tutor's presence enables learners to ask these questions and have them immediately evaluated. Consequently, in tutorial interactions, if the learners generate inappropriate questions in response to

tutors' verbal texts and/or tutors' questions, tutors can directly model the appropriate questions. Tutors' questions can further mediate the demands of textuality by modelling for learners how to question the text in order to construct knowledge. Here the tutor can point to particular ways of operating with texts, demonstrating the kinds of questioning demanded by textuality. In this way the tutor can point to the possibilities opened by text, as well as the constraints imposed by text. In other words, the tutor can facilitate the learners' engagement with a second order mediator, text.

Another way in which questioning assists learning in tutorials is the tutor's use of questions to provoke understanding in learners. In other words, tutors' use of open questions aims at provoking disequilibrium in learners, challenging their understandings to shift from the familiar to the unfamiliar. Added to this, questioning gives the tutor a glimpse into the learners' thinking. This enables the tutor to monitor and scaffold if necessary the correct ways of answering questions/tasks and assembling evidence. While some questions are designed to assist, others are used to evaluate learners' level of understanding. Evaluation questions attempt to uncover the level of the students' knowledge. They are frequently used in recitation (see also page 89). When these types of questions are used to ascertain the level of students' ability, that is, what they can accomplish without assistance, they can be effectively used as tools to guide instruction within the students ZPD. Here assistance questions, which assist the student in accomplishing things s/he can't do on his own, can be used to provoke mental action in the ZPD (Gallimore & Tharp; 1993).

So, teaching through assistance in the ZPD can aid learners' progress towards their potential. Note, this notion of teaching as "the regulation of actions that will enable the learner to construct understanding" (Miller, 1989b:156) is significantly

different to the traditional view of teaching as the transfer of information from one active person (the knowledgeable teacher) to another passive recipient (the learner seeking knowledge). Active, assisted engagement with tasks precedes learners' understanding. The importance of educators regulating learners' actions in the process of knowledge construction moves us out of the learning-teaching paradox by illustrating how teaching (viewed as the regulation of learners actions) in the ZPD can aid learners in constructing understandings.

4.2.3. Text as mediator: The questioning stance of textuality

National interest in providing equal access to tertiary education for learners who want to study further has resulted in some universities changing the mode of delivery of course content (NCESS, 1997; Asmal, 1999). Consequently, in order to ensure that even learners who are unable to attend lectures can study towards a degree, Psychology 1 texts at the University of Natal, Durban, are structured in such a way that the written text can itself mediate learners' access to academic enquiry. However, the notion that text can serve a mediational function seems counter-intuitive, especially as we have just outlined how a tutor could assist a learner's progress through teaching in the ZPD. Moreover, given that the context for this research is help-sessions in which tutors attempt to mediate learners' (unfamiliar with the demands of textuality) access to textual knowledge, how can text serve as a mediator? Ong's (1982) analysis of literacy (discussed in chapter 3 page 61) points out that even dialogical interactions between tutors and learners in the university context can be conceived of as textual in nature, although verbally transmitted. Therefore, both tutors' discourse and the questions they ask are essentially textual in nature, produced for learners to 'read'. Consequently, tutors' verbal texts, although presented in a spoken as opposed to written mode, must also serve a mediational function, provoking learning. However, for text to serve as a mediator, learners must appreciate how to engage appropriately with text, understanding that the demands it

makes upon them are different to the demands made in ordinary conversation. This is especially important in regard to tutors' verbal texts and their open questions. Although spoken, these texts and questions are embedded in and informed by the demands of textuality. Engaging with these texts and questions requires that one identify the textual form of academic spoken discourse. For those learners in whom literacy is deeply interiorised text can mediate their access to academic enquiry, provoking learning. Text's ability to serve a mediational function is explored below.

Text places new demands upon the learner, introducing conflict between what the learner knows and what the text demands, provoking disequilibrium in the learner (Piaget, 1977; Ginsburg & Oppen, 1979). Thus, by pushing the learner towards solving problems, text can itself provoke learning in the ZPD. "Transactions with written texts provide the problem situations that readers need to deal with. During these transactions texts become mediators as the reader takes control of learning" (Goodman & Goodman, 1993: 340-341). Text not only presents the learner with a problem (requiring a solution) but also provides the learner with the means to solve the problem. So, in Piagetian (1977) terms, text (as mediator) provides both for "cognitive conflict" as well as the "resources to surmount this conflict". The text is both a question and an answer; it poses a question (problem) which demands activity on behalf of the reader/learner in order to arrive at the solution (answer); the text is also an answer, for which the reader must 'uncover' the question. Consequently, learners must appreciate that the verbal text produced by a tutor in a tutorial is generated by a question, which learners must discover. However, a tutor's verbal text is slightly different from the written text that learners engage with. While learners can not ask dialogical questions of written text, they can ask these questions of tutors' verbal text. Consequently, where learners are unfamiliar with the demands of textuality, the tutor can mediate learners' access to text by answering their questions in the verbal exchange between learners and the tutor. Further, as the verbal text

produced by the tutor is a condensed version of the written text, learners are able to gain access to the written text via the tutor's verbal text. This kind of reformulation of the written text is particularly important for learners who are unable to successfully identify and select appropriate information from the text without assistance.

Moreover, it is a premise of this research that learners have to act on unfamiliar objects of knowledge in order to construct understandings. In other words, in order to develop critical questioning abilities, learners need to be able to ask questions and engage in academic enquiry in order to gain mastery of the textual form of knowledge construction in the human sciences (Bradbury & Griesel, 1994). The dialogical tutorial context provides a space for learners who are not familiar with the demands of textuality to develop the requisite critical questioning strategies.

Being able to interrogate text, to 'open' it up, then, requires the ability to critically ask questions. For Ricoeur "The essence of the question is the opening up, and keeping open, of possibilities" (Gadamer, 1975:266). Thus textuality demands that readers approach text with a questioning attitude. However, text also constrains the kinds of questions that can be asked of it. The kinds of questions one can ask of text (and the kinds of questions implicit within text) are 'implication'² and 'relational' style questions. These types of questions are, in fact, entirely dependent on text. Where learners are unfamiliar with the critical demands of textuality, they will not be in a position to ask or appropriately answer these kinds of questions. Confronted with open questions the learner must act on them, developing if necessary, new strategies for answering the questions, thereby solving the problem s/he encounters. It is in this moment, faced with problems that they are unable to solve on their own, that the tutors' assistance can mediate learners' access to text. Here the tutor acts as a bridge between the unfamiliar world of text and the familiar world of dialogue. In

dialogue the tutor is able to explicitly unravel the demands of textuality, demonstrating how text can be questioned. Therefore, by asking these open questions in dialogue, the tutor models the kinds of questions learners need to ask in order to engage in academic enquiry, such as implication or relational questions.

Implication questions that seek to probe the logic of textual arguments are textual not conversational type questions. Implication type questions rely on deductive reasoning to infer conclusions from premises; hence, posing implication questions requires a familiarity with deductive reasoning. Earlier (chapter 3, page 61) in the discussion regarding the cognitive demands of literacy, it was noted that deductive reasoning relies entirely on writing and literate modes of thinking for its existence. No conversation (except perhaps in an academic setting, where spoken discourse contains features of written discourse) is, or even can be couched as a syllogism. The necessary nature of syllogistic deduction requires that premises are fixed in time and space (that is, in the written text). Similarly, relational questions, that seek to uncover how certain facts relate to others, are textual rather than conversational types of questions. Relational questions are a reader's greatest tool in their enquiry into textuality. These questions seek to open the text, unravelling the 'hidden' relations between facts that may initially appear to be unrelated. The probing nature of relational questions makes them well suited to addressing ill-structured problems. So, the kinds of questions demanded by textuality are essentially open questions, ones that seek to explicitly interpret the text opening up new worlds of possibilities. However, failure to appreciate the critical demands of textuality, to uncover the question of the text, leads to what Feuerstein (1980) calls 'blurred and sweeping' perception. This kind of perception is characterised by an inability to adequately define the boundaries of knowledge, reflecting an inability to select pertinent

² Although it is recognised that other types of questions can be used as open questions, for our purposes these two kinds of questions are identified as representative of the kinds of

information over less relevant facts. Such 'blurred and sweeping' perception informing learners' open questioning strategies are evidenced particularly in underprepared learners' questions, indicating that these learners are unfamiliar with the demands of textuality.

4.3. Questioning

4.3.1. Provoking Learning

Posing a question is traditionally regarded as a dialogical interaction in which the questioner elicits information from someone. However, questioning does not demand the presence of another person; one can question oneself, question the book one is reading and so on. However, whether one asks oneself or another person a question, the act of questioning directs the enquiry in that it sets limits, highlighting the relevance of certain answers over others. The posed question provides the perfect opportunity for teaching in that it sets the learner and tutor on the same path: towards learning. The learner's question provides the space or opportunity for the tutor to intervene (Dillon, 1986). By highlighting the gap between what the learner knows (and can do) and what the learner needs to know (and be able to do) the question provides unique access to the learners' ZPD, directing the tutor towards specific interventions. When the learner asks the question s/he displays herself/himself and their relation to the object of knowledge. Questions demonstrate for the tutor what the learner already knows as well as demonstrating his/her grasp of the subject matter in question, providing the tutor with a view of the present state of his/her knowledge as well as future anticipated knowledge. This allows the tutor to appreciate what it is that the learner finds difficult or mis-understands, but it is only a sample of the learners' knowledge base; there may be unposed questions behind the initial one. However, a question does more than merely highlight the learners' current situation regarding the problem faced: it demonstrates "the dynamics of this child's relation to open questions demanded by textuality.

the world" (Dillon, 1986: 23). So questioning not only enables the tutor to see what the learner knows, but it also "makes of itself a vortex of learning dynamics-attending and thinking, readiness and motivation, participation and action" (Dillon, 1986: 23). All the things that educators try to instil in learners are demonstrated by the act of questioning. Further, research conducted by Redfield and Rousseau (1981 cited in Sampson et al 1987) suggests that the teachers' use of higher cognitive questions (questions that essentially provoke mental action in the learner) is positively correlated with student achievement (Brophy & Good, 1986)³. Clearly, questioning can be a very useful pedagogical tool (Carlson, 1991). However, if a learner is going to ask a question, they have to gain talk time, seizing the opportunity to dominate the tutorial interaction. This requires a great deal of initiative as well as independence qualities that many first year learners have yet to develop. Moreover, the process of asking questions is itself a complicated one, with various stages where questioning can break down, as Dillon (1986: 19) shows.

According to Dillon (1986) when faced with a piece of information or a 'bit of knowledge' we may either understand this as something familiar, or feel 'perplexity'⁴ because it is not recognised. Consequently, we are unable to easily accommodate this new piece of information, leading to a disjuncture between what we already know and this unfamiliar piece of knowledge. This perplexity leads us to ask a question. Before verbalising our perplexity, we need to adopt an 'interrogative mood'; that is, we need to formulate our question in our mind. Having mentally formulated our question, we now need to verbalise this question. Now, anyone who has ever asked a question in a classroom situation will recognise that these two conditions of asking

³ This finding is contrary to Samson et al.'s (1987) finding that teachers' higher order questioning behaviours were not significantly correlated with student performance. Consequently, this finding must be viewed as inconclusive.

⁴ Dillon's (1986) conceptualisation of 'perplexity' may be likened to Piaget's (1977) notion of disequilibrium, where a new object of knowledge can not be accommodated in terms of existing knowledge.

a question are extremely difficult (Shepherd, 1998). It is one thing to realise that you are uncertain or even 'perplexed', it is quite another thing to be able to formulate what it is that demands an explanation. So, you may know that you don't know something, but exactly how to get at that *something* is quite a feat. Moreover, when you have finally managed to put your question into words, expressing the question aloud, the moment for asking may have passed. With so many possible barriers to posing the question, clearly courage on the learners' behalf is required. So, the learner who asks a question communicates both perplexity, as well as courage. For Dillon (1986) the questioning learner shows, in the act of asking, that s/he needs to know the answer; that s/he wants to know the answer; that s/he believes his/her question is a genuine question to which an answer does exist; that s/he can know the unknown; that s/he has the courage to face the unknown and its consequences and finally, that s/he is committed to learning, to constructing new knowledge. Finally, having posed her/his question, the learner now searches for an answer that will help him/her understand the new object of knowledge. Before asking, the learner must already have some notion of where s/he will find the correct answer. Hence, answering the question requires that the learner knows where to look for the correct answer as well as the ability to judge whether a particular answer is right or wrong. Thus, in answering or seeking an answer to a question, the learner must know the best way (or method) to answer the question, which source (tutor/book) to refer to for the answer and how to critically evaluate the answer. Once the learner has uncovered the answer, either by asking the tutor or looking it up in a reference text, learning takes place. The question becomes meaningful together with the answer, leading to new learning. Given the hazardous journey from question to answer, how can tutors⁵ encourage learners to ask questions; how can tutors read (and interpret the meaning) of learners' questions and how can they effectively question learners in

⁵ The word 'tutor' is used interchangeably with the word 'teacher' in this research as the focus is on university teaching, a role undertaken in the first year Psychology course by tutors.

ways that develop textual engagement and real movement in the ZPD? For Dillon (1986) the facilitation of learner questions requires the creation of a 'space' in which they can be freely posed.

4.3.2. Pedagogy of learner questions: Context and Control

Take for example an educational institution: the disposal of its space, the meticulous regulations which govern its internal life, the different activities which are organised there, the diverse persons who live there or meet one another, each with his [sic] own function, his well defined character- all these things constitute a block of capacity-communication-power. The activity which ensures apprenticeship and the acquisition of aptitudes or types of behaviour is developed there by means of a whole ensemble of regulated communications (lessons, questions and answers, orders, exhortations, coded signs of obedience, differentiation marks of the 'value' of each person and of the levels of knowledge) and by means of a whole series of power processes (enclosure, surveillance, reward and punishment, the pyramidal hierarchy) (Foucault, 1983: 218/9).

In the above quote, Foucault (1983) points to the asymmetrical power relations that exist in classroom situations, where the teacher dominates talk time and the learners await assessment of their abilities under the normalising gaze of the teacher. What this highlights is the fact that the classroom context in which questions are asked is itself a historical construction, where issues of cultural power and the politics of difference and recognition are (re)constructed and played out (Carrington & Luke, 1997). This social context, then, is very much a space imbued with different meanings for tutors and learners. Moreover, extensive evidence points to the teacher (and by extension, the tutor) as the most powerful person in the classroom (Reynolds, 1990 cited in Carrington & Luke 1997). Bordieu (1991) suggests that the

'habitus' (class and culture based ways of 'being' engendered from birth and perpetuated through discourses of power and discursive practices that inform dispositions and attitudes underlying behaviours) of the dominant group permeates social life, making it difficult for groups with an alternative 'habitus' to participate equally. Thus, should learners possess a different 'habitus' (or discourse tendency) than tutors their questioning behaviours and general levels of participation in the discourse, will be limited (Corson, 1993). In the tutorial context, the tutor is perceived as possessing knowledge and, consequently, the power to affirm or deny the value of learners' questions. Given the importance of questioning behaviour in constructing knowledge, clearly learners need to feel that they have enough control over the context to ask questions. The challenge for tutors, then, is to provide a non-threatening space for learner questions, which will also extend them in the ZPD.

In order to create a forum for questioning, the first and most obvious step is to make room for learners' questions. Providing for learners' questions requires that the tutor stop asking questions; the more talk time occupied by the tutor, the fewer questions learners will ask. After making room for the learners' questions, the tutor must invite the learners to take advantage of that space by encouraging them to ask questions. Learners will seldom seize this opportunity, requiring patience on the tutor's behalf. Although it is tempting to fill the silence with a question of one's own, Dillon (1986) proposes that tutors wait patiently for learners to pose their questions. When the learner begins asking a question, the tutor must welcome the question, listening to the question and not cutting them off by answering it before they have finished asking. This requires letting them struggle towards verbalising their thoughts. Although a teacher's natural reaction is to answer a question immediately, Dillon (1986) suggests that one must "sustain the asking" (1986: 24). One of the most important reasons for sustaining the asking is to open up enquiry, exploring possibilities with the student, rather than closing enquiry by answering immediately.

However, there is another reason why the asking should be sustained. Learners may not be aware of what underlies their question, or feeling of perplexity. Therefore, the manifest question asked may not represent the latent underlying question. To answer immediately is to close the issue, rather than opening the problem to discussion. Therefore, how a tutor reacts to a question will either sustain it, opening enquiry, or close it, ending further enquiry. Moreover, it is not only the learners' questions that provide mediational opportunities, tutors' questions also provoke action within the ZPD.

The question posed by a tutor may be of a different kind to that posed by a learner. When a learner asks a question, they are generally seeking an answer to a problem that they are unable to solve without assistance. The tutor, on the other hand, almost always poses questions that s/he knows the answer to (Dillon, 1988). Such questions may simply be aimed at keeping the lesson going, assessing the learners' knowledge or demonstrating the 'moves' required by learners to accomplish an academic task. However, the tutor may ask questions that are intended to 'shift' the learners' understanding, creating cognitive conflict (Piaget, 1977; Ginsburg and Oppen, 1979). Such questions 'force' a rupture between what the learner knows and the new object of knowledge under construction. These kinds of questions provide moments for opening enquiry, shifting knowledge from what is familiar to that which is unfamiliar: in other words, these kinds of questions provoke 'perplexity' in learners (Dillon, 1986, 1988). Above we have noted that 'perplexity' is a necessary condition for asking questions and, consequently, developing understandings. However, merely feeling 'perplexed' is not sufficient to provoke learning. How learners respond to the 'perplexity' induced by the tutor will determine the extent to which learning proceeds. Learners may answer the tutor's question so slowly, that the tutor interrupts them or 'finishes' their sentence for them, closing enquiry, instead of opening it up. Learners may reply to a question by saying that they don't know the

answer. If this statement is literally true, that is, if they really do not know the answer, then this kind of answer can be useful, illustrating (for the tutor) gaps in the learners' knowledge. However, this kind of answer often masks an unwillingness to 'open' oneself to further inspection (Dillon, 1988). Many students, who say they don't know the answer, are in fact able to answer correctly when in an environment in which they feel 'safe' enough to risk being seen as ignorant. With this in mind, the questioning format used by tutors to open enquiry must, at the very least invite learner participation by providing a space in which learners can feel free to answer. Providing this space requires that tutors are aware of and sensitive to the asymmetrical power relations existing within the tutorial context. Awareness, however, is only a first step towards challenging these power relations. By inviting learners' questions and responses, enabling them to become partners in knowledge production, as opposed to monopolising the questioning space, tutors can actively shift the status quo, with learners and tutors together engaged in producing knowledge. To this end, tutors must provide learners with access to the tutorial conversation. Dillon (1988) suggests that recitation (a process of asking factual questions, eliciting direct answers) is a particularly useful way of getting learners involved in the conversation.

4.4. Question Types: Open versus Closed.

In a conversation, one can ask questions and immediately receive answers to those questions. Dialogue, then, invites particular types of questions; questions to which a direct answer is available. Another way of saying this, is to say that dialogical questions invite closed responses. So, a learner asks a teacher a question in order to ascertain the answer, not to provoke further enquiry, or open discussion. The open-ended, questioning stance required for knowledge construction in the university setting suggests that dialogical questioning is an inappropriate questioning stance for engaging with academic enquiry. However, we have noted earlier (chapter 4, page 78) that the tutorial context at university is not an ordinary dialogical situation. Explicit

instructions to learners to bring questions to tutorials with them, in order to provoke discussion, points to an essential difference between ordinary dialogue and the dialogue characterising tutorial interactions. That is, tutorial dialogue, and the questions and answers that characterise it, is very specifically aimed at extending and opening enquiry, promoting knowledge construction. Thus, the questioning strategies elaborated below, must be viewed in relation to the particular social context (the tutorial help-session) in which they play themselves out. Further, the dialogue that is constructed during tutorials indicates that dialogue can be used to mediate learners' access to textuality, with tutors modelling how learners can effectively interrogate text.

4.4.1. Recitation and the construction of a narrative: Closing in order to open?

Recitation is a form of question-answer that is directed by the tutor. It is essentially a questioning format where the tutor poses factual questions and the learner responds with the answer. Turn taking in recitation is strictly determined by the tutor, with the tutor asking a question, learner answering and tutor then evaluating the answer. As the tutor asks questions, learners tend to speak in answers. With their conversation being limited to answering the tutor's questions, the learners do not talk amongst themselves. As this form of question-answer teaching does not allow for much discussion, it is not ideal for all teaching purposes. Recitation can in fact, be seen as a 'closing' of enquiry, rather than opening up discussion, in so far as the tutor poses questions that require a simple, correct answer. The types of questions posed in recitation are essentially Strohm-Kitchener's (1983) puzzle type questions. These kinds of questions do not provoke enquiry because the response they elicit is essentially a closed answer. However, the view that recitation closes enquiry fails to appreciate the scaffolding function that recitation can serve, when correctly used.

At a very basic level, recitation gets learners to speak, inviting them into the conversation and getting them involved in the topic under discussion. Especially where learners are unwilling to speak, or engage in discussion, recitation style teaching at least serves to engage the students in the topic. Another purpose recitation serves is to check that students have understood the material in the text. As this is a text-based course, recitation (getting them to recite what they know) helps the tutor to see whether learners are keeping up with the work. Hence, in recitation the tutor externally regulates learners' engagement with academic enquiry, essentially modelling how learners' should exercise metacognitive control over knowledge construction. Moreover, recitation keeps learners in the conversation, holding their attention. The ability to focus and direct learners' attention is very useful. Especially where learners are unable to select relevant information from the text, recitation can help learners by guiding their focus. Thus, where learners evidence 'blurred and sweeping' perception, characterised by an inability to focus on and select relevant information from the text, recitation models for them how to focus their attention by highlighting important information for the learner (Feuerstein, 1980). Essentially, effective recitation constructs a 'story' by way of questions and answers. The kind of question posed in recitation is quite specific: the question asked is not in question for the tutor, these are not questions that perplex self. The purpose for asking the question is not for the tutor to learn something new, but rather the purpose behind the question is to elicit learners' answers, seeing whether they understand the material they are studying. The learners, then, are supposed to know the answer to the question that the tutor puts to them. Consequently, the correct answer is predetermined, making evaluation easy; the answer is either right or wrong. However, the tutor does not just have to evaluate the answer as 'right', closing enquiry. There are various ways of evaluating an answer that can in fact open enquiry. For example, repeating the correct answer is one way of evaluating it as correct. The repetition of the correct answer can be followed by a) confirmation b)

emphasis c) elaboration (this often occurs after a learner has not provided a satisfactory answer to the question) and d) praise. In recitation, the educational benefit derives from how the tutor makes use of questions and what use s/he makes of answers to these questions. Although this questioning format might usefully involve learners in the developing dialogue, Dillon (1986) points out that "discussion", not recitation, is the most useful educational interaction for promoting learning. For Dillon (1986) a "discussion" is an interaction in which enquiry is opened and the tutor and learners together construct the answer to the problem under discussion. Clearly, then, the problems that lead to discussion are ill-structured problems to which no single guaranteed answer exists.

4.4.2. Discussion: Ill-structured problems and Open Questions

In order to facilitate a discussion, the tutor asks questions that are perplexing to self, that is, questions to which the tutor may not know the answer. These are open-ended questions, intended to elicit discussion. Unlike recitation, the tutor does not monopolise talk time, but rather allows all learners to talk amongst themselves. The answers to be arrived at are negotiated ones, open for discussion rather than closed for answer. The correctness of the answer is not predetermined, as in recitation, but is negotiated. No single, final correct answer exists, several answers may be right and there may be different answers for different learners. These open questions are the kinds of questions, which characterise academic endeavour; they are the ill-structured problem type questions, which Strohm-Kitchener talks about. Clearly, these kinds of questions provide the basis for the greatest learning by shifting learners from their familiar understandings to new unfamiliar knowledge (Craig, 1992). Although, obviously, discussion is the ideal in that it promotes independent questioning in learners, it will be argued in the discussion that this questioning format is not appropriate where learners do not share a level of understanding with the tutor. Some learners, it will be argued, may initially benefit from recitation.

4.4.3. Feedback Questions: Metacognitive instruction.

In order to learn, one must be able to effectively monitor one's engagement with the task. The ability to regulate one's actions in solving a task, to control what behaviours or solutions will solve this particular task, is crucial to progress in learning. Strohm-Kitchener (1983) refers to the ability to monitor one's action in problem solving as metacognition. Pinard (1986) elaborates Strohm-Kitchener's (1983) notion of the self-regulatory nature of metacognition as entailing both control over what the task demands as well as knowledge over one's self (see also chapter 4, pages 70-71). So, metacognition refers to a learner's ability to monitor and regulate his/her mental processes during engaging with (or learning how to engage with) a new task. Clearly, where learners' do not exercise metacognitive control over a task, it is necessary for tutors' to include metacognitive instruction in their teaching in order to assist learners' to develop this ability. In the university context, metacognitive instruction models how learners' should approach text, demonstrating how to focus on relevant information in the text. Further, metacognitive instruction provides learners' with feedback regarding their engagement with both tasks as well as the text. One of the most important functions metacognitive instruction serves at university is to mediate learners' access to text by explicitly unravelling the demands of assessment/examination questions as well as modelling the correct 'moves' required for arriving at a good answer. Miller (1996) has noted that underprepared learners very often are unable to appreciate how to answer an essay or examination question, because they are unable to evaluate what counts as a good answer. In addition, these learners general lack of familiarity with the demands of textuality, results in them approaching examination questions with an inappropriate framework. Consequently, the metacognitive instruction provided in tutorials can model for learners how they should approach examination questions as well as demonstrating how to ask open questions, mediating learners' access to textuality.

4.4.4. Assessment Questions

Assessment and learning are often viewed as separate processes, which serve separate educational goals (Woodward, 1998). In so far as assessment tests learners' current knowledge base and not their potential, it is indeed separate from learning. However, one may view assessment and learning as complimentary processes that together, as opposed to separately, lead to effective learning. The extent to which assessment questions can provoke learning and new understanding depends on the nature of the question. Thus, puzzle type problems (such as addition in mathematics), for which a single correct answer and method for obtaining that answer exists, will provoke certain responses from learners. Ill-structured problems, on the other hand, for which no single answer or guaranteed method of obtaining that answer exists, require different kinds of actions from learners trying to solve these problems. School examinations tend to rely heavily on asking puzzle-type questions (Strohm-Kitchener, 1983). Therefore, learners' embarking on their first year of university study, familiar with this type of question, view assessment in much the same way that they view school assessment; as a means of 'rehashing' course content, rather than as a means of developing their critical abilities in relation to text (Allison & Gupta, 1997; Stefani, 1998; Dalziel, 1998). Hence, many learners do not approach examinations with the critical stance required to effectively engage with the type of questions characteristic of problem solving in the Human Sciences, namely, ill-structured questions (Schleppegrell & Simich-Dudgeon, 1996). Faced with an examination question, learners' respond to the question with familiar techniques learnt from school (Thomson & Falchikov, 1998). However, assessment questions, especially in the human sciences, demand a critical (as opposed to merely repetitious) response from learners. Moreover, assessment questions require that the student is capable of selecting the content required to answer the question. Thus, learners must appreciate that questions constrain certain responses. The need to

evaluate evidence, appreciating the open-ended nature of enquiry is contained within an assessment question.

Unlike examination questions encountered in school, assessment questions in the human sciences have a dual focus; first they demand that the learner provide the correct content required and second, they demand that learners' respond in a critical manner (Miller, 1996; 1997). Further, an 'authentic' question, one that enquires about a problem in order to know about it, is not necessarily posed as a question (Bradbury, 1997). Thus, any enquiry, even an apparent statement, may mask a hidden question. This type of question is precisely the kind of question posed in examinations. This is also the type of questioning stance underlying tutors' use of open questions in tutorial interactions. Appearing as a statement, the critical demands implicitly embedded in the question are not apparent to learners. It is these implicit form (as opposed to the content) instructions, contained within the question that learners struggle to engage with. Instructions to discuss, or compare, evaluate or contrast are unfamiliar to many learners who have been trained throughout their schooling to simply restate the content of the course in the examination. This critical demand, implicit in the question itself, needs to be explicitly 'opened up' for learners, with tutors actively modelling open questioning techniques demonstrating for learners how to approach examination questions in order to engage with the form, as opposed to merely the content of the question (Miller, 1997). To this end, tasks that model examples of examination questions coupled with feedback to these tasks should form part of any entry level course in the human sciences, with the task mediating learners' critical engagement with assessment questions. In this way, tasks and feedback provide a model for learners' engagement with Human Science assessment questions by explicitly highlighting how learners should address form instructions embedded in examination questions. (See also Craig and Bradbury, 1994 for further insight into how one can 'open' up assessment questions for

learners). However, where learners are unable to engage effectively with written tasks, the tutors use of open questions and metacognitive instruction models how learners should approach the ill-structured problems facing them at university.

In tutorial interactions, tutors' open questions are verbal presentations of assessment type questions. As tutors' are familiar with the demands of textuality, they are able to ask questions that are essentially textual, such as implication or relational questions. These are precisely the kinds of questions learners must engage with during examinations. Therefore, especially where learners' evidence an inability to engage with assessment type questions, tutors' use of open questions and responses can verbally model appropriate ways of questioning in order to engage in academic enquiry.

4.5. Concluding Comments

In conclusion, the Vygotskian (1978) notion of mediation enables us to appreciate teaching as the external regulation of learners' actions, facilitating learners' active construction of knowledge. Further, we are able to understand the crucial role self-regulation plays in learning and problem solving. The ability to regulate one's actions in relation to knowledge, then, begins as external regulation before being internalised as self-regulation. The central role questioning plays in enquiry and self-regulation informs the specific focus on questions in this research. Moreover, questions point to an underlying epistemic base. Therefore, questions can be viewed as products that point to the underlying epistemic assumptions informing learners' approach to academic enquiry. The identification of a categorical framework in which to understand how questions can open or close enquiry is elaborated in chapter 5.

5. METHOD

5.1. Methodological Framework

Post-Apartheid South African society, in the last decade of the 20th century is characterised by extreme fluidity. Traditional 'western' epistemologies are being confronted by different, African epistemologies; both systems of thought impacting on, and in some instances, transforming each other. Previously fixed structures, both political as well as social, have been called on to adapt in this ever-changing society. From a Marxist perspective, which holds that generative structures, previously imperceptible (or to use Vygotsky's terminology 'fossilised') become more visible (and consequently easier to study) in periods of rapid social change, this transitional historical 'moment' provides an excellent research 'moment' (Bhaskar, 1979). It is in this moment that researchers may endeavour to trace the generative processes underlying manifest products. To this end, this study is located within a process/developmental paradigm, informed by the work of Vygotsky, Luria and Werner (Luria, 1976). This paradigm informs the choice of tutors' and learners' questions as manifest representations, or products, pointing to the hidden, generative processes underlying their production (Catan, 1986). Therefore, questions posed in tutorials provide windows into both learners' and tutors' cognitive processes, pointing to the specific epistemic assumptions informing their engagement with knowledge construction within the tutorial context. Additionally, this research's focus on questions is informed by the Piagetian (1977) conceptualisation of learning as a process, which requires that a learner experience disequilibrium in order to move from knowledge of the familiar, towards knowledge of the unfamiliar (Craig, 1991). Consequently, tutors' use of open questions as mechanisms to provoke disequilibrium is investigated as a method of teaching. Tutors' and learners' questions, posed in a dialogical interaction, are therefore viewed as both mechanisms for teaching-learning and cognitive tools with which both tutors and learners regulate their problem-solving abilities. The dialogical nature of tutorial

interactions, however, appears to oppose the theoretical view supporting this research, namely, that action must precede understanding. Tutorials are contexts in which learners are supposed to become more familiar with the demands of textuality. Now, if action precedes understanding, then surely the learners must act on text in order to understand it. Consequently, no amount of dialogue between the tutor and learners can lead to understanding in learners. Further, learners' reliance on asking questions in a dialogical format (that closes enquiry in an answer) can surely not facilitate their use of the kind of critical questioning stance demanded by textuality. Although these problems can indeed underlie dialogical interaction, this research aims to illustrate how the tutorial dialogue in fact mediates learners' access to text. In chapter 7, extracts from the data illustrate tutors' use of dialogue to mediate learners' access to text. So, where learners are so unfamiliar with the demands of text that they are unable to appropriate meaning from the text, the tutorial dialogue does indeed appear to mediate learners access to text, with tutors assisting learners both in how to understand the demands of text as well as modelling how learners can regulate their problem solving activities. In the tutorial interaction, tutors' dialogue serves a scaffolding function, modelling questions to 'read' text and the world of textual knowledge.

Finally, this research views the tutorial discourse itself as a text, capable of being analysed. This approach derives from a hermeneutical understanding that discourse viewed as text may be read and meaningfully interpreted (Ricoeur, 1981). The tutorial dialogue, constructed between tutor and learners, is therefore, analysed as a text. Underlying the interpretive framework of this research is the Derridian deconstructive understanding that meanings, constructed and reconstructed throughout the tutorial process by both tutor and learners, as well as the interpretations drawn from these meanings, are not fixed but are subject to re-interpretation, across time and context (Derrida, 1995). Two basic premises informing

this research follow from this particular developmental approach: 1) an awareness of learning as a process of change and 2) an appreciation of the socio-historical and discursively constructed nature of cognitive processes.

5.1.1. Methodology

The challenge facing early investigators, such as Luria and Vygotsky, who were intent on showing that an understanding of child development requires an understanding of how that child becomes a cultural (or socialised) human being, was how to externalise internal psychological structures in order to study them. "How can we make manifest their hidden mechanism? How can we evoke them in the process of experiment in order to master completely these processes? ...We must create in the process of experiment a model of cultural behaviour" (Luria, 1928: 50). For Luria and Vygotsky, this required setting unfamiliar tasks for children that were essentially beyond their ability to solve independently; that is, the experimental conditions produced a disjunction between what the child knew and could do and what the child needed to know and do in order to effectively engage in the task. Thus, the problem-solving action took place within the zone of proximal development. For example, to solve memory tasks children were provided with external instruments to aid their recall. In this way, the internal process of memorising was essentially 'forced' outwards, for the researcher to study. By using children (as representatives of the ontogenesis of adult thought) of different ages and tracing the qualitative differences between how these different age groups memorise, Luria and Vygotsky traced the genesis and historical development of memory. From the pre-literate pre-school child (representative of our pre-literate society) who does not effectively use external methods to aid recall through to the literate school child whose memory is mediated by a sophisticated set of culturally defined, meaningful signs, in writing, Luria shows that "we are here witnessing by way of experiment the process of evolution of cultural methods of writing which resuscitates before our eyes the most ancient primitive

forms of writing; we see how our schoolboy refits himself with new weapons and how the whole of his psychic condition is being reconstructed under the influence of such refitment" (Luria, 1928: 53) Thus, observing that literate children approach tasks in a qualitatively different way to non-literate children, Luria pre-empted Ong's (1982) analysis of literate versus oral modes of thought. Essentially, use of experimental-developmental methods led to Luria and Vygotsky's (1928: 55) conclusion that the use of new cultural methods, which mediate the child's actions, would lead to new psychological structures. In other words, provided "with new cultural arms...new psychological weapons" will be forged during the child's development (Luria, 1928: 55). For Vygotsky (1978) the most crucial "cultural arms" in the developing child's 'arsenal' is speech. Initially used to externally direct behaviour, once internalised speech serves a self-regulatory role, directing behaviour as well as organising all higher mental functions.

In connecting the performing of tasks with a series of external operations we are carrying outward whole systems of psychological processes and acquire the possibility of observing objectively how their structure is changed under the influence of inoculating new instruments, and new cultural methods (Luria, 1928: 55).

The importance of this method which is capable of explicating how culture transforms the individual developmentally, anticipates Feuerstein's (1981) understanding of cultural deprivation as leading to underdeveloped cognitive functioning. Here too, in the focus on importance of cultural development we find the basis for Vygotsky's conception of the individual as necessarily social. The mind develops in society through mediation, through being regulated by an other. In daily practical activities, the developing mind is constantly regulated by external means, whether these means are people or culturally agreed upon signs (such as language).

As a method for externalising internal psychological processes, the process/developmental approach associated primarily with the work of Vygotsky (1978) and Luria (1928/1976) provides this study with the means with which to trace from the learner's question (the product) to the generative structures or epistemological base underlying the manifest question. The emphasis of this study then, is on the processes, which underlie and inform learners' questioning and response strategies. However, it is the surface question, or product, hinting at the cognitive structures and processes generating performance, which opens the process to analysis. Therefore, the questions themselves present 'windows' to the 'hidden' processes and consequently, they must be explored both in terms of their manifest appearance and as indicators of cognitive structures. Moreover, learners' questions are verbal indicators of action required in the zone of proximal development in that they demonstrate both what the student knows (and can do) as well as displaying what the student needs to know (and do) in order to effectively approach and understand the text, while tutors' questions provoke action in learners and reveal the deeply textual world to which they belong.

The rationale, for investigating learners' questions is based firstly on the Vygotskian understanding of the zone of proximal development as that area in which effective teaching-learning can occur: in this case, learners' questions point to mediational opportunities for the tutor, highlighting the 'gap' between what learners' know and can do on their own and what they can do with the tutors' assistance. And second on the Piagetian notion of cognitive conflict, as providing the necessary impetus for learning (cognitive change): in this research learners' questions are manifestations of this conflict, displaying what Dillon (1986) calls "perplexity". The rationale for investigating tutors' questions is also based in the Vygotskian conception of the zone of proximal development as providing the mediational opportunity for learning as well as the Piagetian conception of disequilibrium. In this

case, these two theoretical concepts can in fact be seen to work together, with the tutors' questions provoking disequilibrium in the learners, opening up learning-teaching opportunities for action within the ZPD. The nature of tutors' questions may also (in some instances) serve a scaffolding function, with the tutors' questions guiding and monitoring the student's responses (Iedema, 1995). Learners' and tutors' questions and their respective responses then, have been selected as "cells" or micro-units reflecting the coming together of two different traditions (the tutors are informed by 'Western' literate traditions while many learners¹ are informed by African oral traditions) and learning histories (with tutors essentially entrenched in university ways of knowing, and learners' representing widely divergent learning histories) providing for 'moments' of analysis. In order to develop a more informed understanding of the nature of questioning, Shepherd (1998) points to the importance of analysing both questions and responses when studying questioning strategies. The basis for the view that tutorial discourse can be read and analysed as a text derives from the hermeneutic tradition that views discourse and human action as a text (Ricoeur, 1981).

5.2. Science, Laws and Language: The discursive turn.

At the turn of the 19th century psychology was a very young science, lacking the political and ideological power of the older, more established physical sciences. (Keats & Urry, 1980) Seeking to establish itself as a valuable endeavour, psychology allied itself to the physical sciences, which were viewed as embodying objectivity. Hence, since the Vienna Circle, psychology has endeavoured to model its methods on those of the physical sciences, resulting in a distinction being made between observations (empirically recorded facts) and theoretical statements. Steeped within positivist tradition, such a distinction was preserved in order to 'guarantee' the

¹ The heterogeneous student population makes such a generalisation regarding traditional backgrounds inadvisable. However, subject demographics for this research illustrate that

objectivity of human and social scientific knowledge (Keats & Urry, 1980). The premise was that it was in fact possible to objectively observe empirical data in a theoretical vacuum.

Today however, following critiques from philosophers of science such as Feyerabend (1988), Kuhn (1970) and Popper (1972), researchers in the human sciences recognise that any observation, any collection of 'facts' in the physical world, is necessarily already imbued (or 'laden') with theoretical interpretation. In fact, even physical scientists point out that no scientific description of any 'fact' is possible in the absence of theoretical assumptions. The very language used by scientists to identify an empirical fact already structures how the scientific community will meaningfully understand that fact. In fact, some scientific 'facts' only exist within the scientific community in language. An immediate example from the physical sciences is a 'quark', hypothesised to exist (and indeed utilised in theorising) and yet never observed. In psychology Freud's (1976) theoretical elucidation of the unconscious motivation underlying all human behaviour is a perfect example of a 'fact' which has no meaningful existence outside of a particular theoretical 'language game' (or discourse governed by shared rules). The distinction, then, between objective, empirical facts and theory (or observation and conceptual frameworks) is no longer tenable. For many, however, this conclusion is extremely problematic. The problem lies in the apparent lack of certain criteria against which to assess scientific development that this conclusion appears to proclaim. Such a fear originates in a false belief that a metanarrative, or grand story, capable of guaranteeing 'truth' and unifying discourses, exists outside of human social life. The most radical challenge to certainty and truth has come from postmodern theorists, such as Rorty (1989) who challenge the very possibility of truth. However, one need not accept Rorty's (1989) radical conclusion that obligatory methodological constraints on enquiry no longer

most learners at least in this research have at least some reliance on African epistemologies.

hold; that 'objectivity' in interpretation is an obsolete concept. For those who seek some form of objectivity in the human sciences, hermeneutics is eloquently re-established by Ricoeur (1981) as a theory of method and objectivity in interpretation in his view of discourse as text.

5.2.1. The Human Sciences and the hermeneutical circle: 'Opening' text.

In the human sciences, knowledge construction is viewed by many in terms of Schleiermacher's (1985) formulation of the hermeneutic circle where:

Complete knowledge always involves an apparent circle, that each part can be understood only out of the whole to which it belongs and vice versa. All knowledge which is scientific must be constructed in this way (Schleiermacher, 1985:84).

Hermeneutical methods, as opposed to those of the natural sciences, recognise the socio-historical construction of their subject matter accepting that where human beings are studied, an alternative to natural science's objectifying methods must be found (Gadamer, 1975). For Ricoeur (1981) the human sciences are hermeneutical because the object of their investigations is characterised by many of the features of text and because their interpretative methodology relies on the same kinds of procedures developed by text-interpretation (Wood, 1991). Arguing this claim, Ricoeur (1981) delineates the nature of text and proceeds to illustrate how meaningful action (studied in the human sciences) fits securely within this textual paradigm. The object of the human sciences can therefore be interpreted as a text, to be read. The textual model outlined by Ricoeur (1981) has four main features, which characterise text and, consequently, characterise meaningful action:

1. Meaning is fixed in writing. Unlike spoken language, which is fleeting, writing fixes the words spoken in time and space. The meaning of written discourse is essentially autonomous. In writing meaning is freed from the cultural context in which it arose. In the human sciences, meaningful action is also fixed, objectified in order to be scientifically studied. Human action attains autonomy by

- transcending its immediate situation and becoming 'fixed' in enduring social structures (Ricoeur, 1981).
2. The meaning of the fixed text is detached from the author's intention. Once the author fixes his/her thoughts in text, the intention behind his/her thoughts, or even his/her reasons for writing are separated from the fixed words appearing on the page. Unlike a conversation, where one can ask the person what they mean by certain things, one can not ask the text what the author's intention in writing was. By freeing itself from the author's intentions, text opens up new opportunities for meaning. In the human sciences, action is detached from its agent in order to be objectified and studied. Like the text that is meaningful even in the author's absence, so too is detached action capable of being meaningfully interpreted in the 'traces' it leaves on social life, in the absence of its 'author' (agent). In this way 'autonomous' action contributes to the emergence of social structures or institutions. In so far as human actions become 'fixed' as institutions or social structures, their meaning no longer corresponds to the intentions of the actors. Thus, the kind of distance found between an author's intention and text is also found between an agent and his/her action. There is then an element of distance between text and reader; between actor and interpreter.
 3. Reference is no longer ostensive. In speech, one can point to what one is talking about, ostensibly defining a chair, for example, by pointing to one. Text does not point to any absolute reference in this way: it does not refer to a specific situation, but rather by freeing meaning from a specific situation, text opens up new worlds. Just as text breaks from ostensive references, so too does the importance of action exist beyond its relevance in a specific context. In other words, important actions develop meanings, which can be carried out in different contexts, at different times. The American notion of democratic rule is an example of the importance of a meaningful action transcending the relevance it had in a specific context. American style democracy has been 're-enacted' in various contexts

(such as South Africa), developing new meanings as it gets taken up by different cultures. By becoming detached from a particular event, the meaning of an action becomes 'objective'. It is in this way that social structures or patterns can be interpreted as texts, documents of human action.

4. Text is not addressed to a specific person, but rather to anyone who can read.

Text, unlike dialogue, addresses itself to a universal audience. Just as text is 'open', addressed to any number of possible readers, so too can action be seen as 'open', to readers to interpret the intention of the agent. American democracy has been interpreted and re-interpreted across time and space. In this way, meaningful action is open, continually waiting to be 'read' and interpreted in new ways.

Ricoeur identifies these four features of text and meaningful action as constituting the objectivity of text and the human sciences. The importance of this move for the human sciences is that Ricoeur here provides a method of objectifying human action in such a way that it can be studied scientifically. In his analysis of human action considered as text, Ricoeur (1981) provides hermeneutics with a method and object of study. By viewing discourse as text, and illustrating how meaningful action can be understood as text, Ricoeur (1981) illustrates how text can be objectively interpreted. Viewing discourse as text enables us to turn to discourse as an object of study.

5.2.2. Constructing a 'new' object: The discursive turn.

Understanding how learners change through learning requires a theoretical framework capable of articulating the dynamic interrelationship between the individual person and the specific socio-historic context within which they construct and reconstruct their learning experiences. One of the central concepts employed by psychologists interested in developing just such a framework, is the concept of 'discourse' derived from postmodern and post-structuralist thought and often accompanied by the method of deconstruction (Parker, 1997). According to

Eisenstein (1988) the term 'discourse' "focuses on the politics of language and knowledge- the awareness that power is constructed in and through language... Discourse focuses on the importance of context within meaning on the open-texturedness of reality. There can be multiple standpoints, multiple truths, multiple sites of power/knowledge" (1988:10-11). For Ricoeur (1981) discourse is identified as a language event, characterised by distancing, which makes "possible the objectification which reigns in the human sciences..." (Ricoeur, 1980: 131). As discourses and discursive practices capture the dynamic interrelationship between the individual and social, studying them provides a possible framework, within which to (re)construct descriptions of student and tutor interactions. It is the discursive 'event' that must be 'read'.

Discourses don't stand alone but are the results of a practice of production, which is complex: subject to change and re-inscription. The practices that form part of our everyday experience are produced and reproduced meaningfully, through discourse. Discourse does not determine reality; however, it does define how we attribute meaning to reality. This does not amount to the assertion that there is no real world, but rather that we encounter the 'real' through texts, mediation (for example language) and representations. Moreover, every discourse is the product of practices, which are material, discursive, and continually being woven into other practices (Henriques, 1984). In these terms, the turn to discourse as a field of study begins with a materialist theory of 'knowledge', recognising it as a specific kind of production with relations to the material and social world as well as appreciating the existence of socio-historical power relations, which are conserved by ideology and legitimated by scientific discourses. This does not mean that the individual subject is completely determined by discourse. Of course, discourse can never entirely determine the subject's constitution; biological constraints can not be ignored (Potter and Wetherell, 1987). Moreover, Campbell (1992) suggests that the notion of

discourse should not be viewed as necessitating the loss of useful concepts such as cognitive processes and social identities. Rather, discourses and discursive practices should be viewed alongside such concepts, giving meaning to subjects in their socio-historic contexts. These discourses, like the subjectivity they implicate and are implicated by, are unstable and susceptible to change (Parker, 1997). For example, the patriarchal discourse proclaiming the irrationality of women, which marginalised and oppressed women, is slowly giving way to a new discourse which views women as rational which, in turn, allows for a shift in power relations and ideological assumptions. By highlighting the meaninglessness of attempting to study the individual independent of his/her social context, a socio-psychological framework within which to elucidate cognition, points the way to a more comprehensive theory of learners' educational experiences within the university context.

Accepting, then, that the 'individual' and the 'social' are not opposites, but are intimately interconnected, we must seek an object of study, which captures this dynamic interrelationship. In short, we must look to discourse, to language and to discursive practices if we want to uncover and interpret the dynamic interrelationship between the individual and society (Parker, 1997). In discourse (which is argued by Potter and Wetherell (1987) to be simultaneously constitutive of the individual and social dimensions) the individual and society emerge as one unit of study. The view that social reality and individual identity are constituted in and through discourse enables us to turn to discourse to meaningfully describe student learning .

Highlighting the importance of discourse as an object of study, Stubbs notes that

by studying discourse sequencing one can study in empirical detail how teachers select bits of knowledge to present to pupils; how they break up topics and order their presentation; how distinct topics are introduced and terminated; how pupils' responses to questions are evaluated; how pupils' are made to reformulate their contributions; how bits of knowledge are paced and allowed to emerge when the

teacher considers it appropriate. I cannot see how such topics could be studied, other than in an ad hoc way, by looking at isolated utterances or features of language. But by studying the overall structure of the teacher-pupil interaction as a discourse system, these topics are inevitably studied (1986:127-128)

The hermeneutical understanding that discourse (and in this case, the tutorial discourse) can be read as a text, informs analysis of the data. The extensive transcribed data coupled with performance concerns for learners lend themselves to quantitative data analysis (Linn, 1986). However, quantitative measures alone fail to uncover the meaning of trends observed in the data. Recording the frequency of certain types of questions without interpreting the basis for asking these questions suggests nothing regarding the underlying cognitive processes informing the act of questioning. So, while it is recognised that the explanatory demands of psychology require quantitative methods of analysis from which to derive general 'laws' of psychological functioning, the need for meaningful interpretations, utilising qualitative methods of analysis, is also recognised (Morrow, 1994). This part of the research process involved analysing the quantitative data with the view to providing thick descriptions (or detailed 'stories') of the data collected (Denzin, 1989). This allows for a more meaningful interpretation of the quantitative data collected, providing a basis from which to develop meaningful explanations of the data as well as effective interventions (Banister et al, 1994). So, this research seeks to make use of both quantitative and qualitative methods of data analysis. As *techniques*, or *methods* of investigation it is suggested that both quantitative and qualitative *methods* may be applied to data analysis (Morrow, 1994). The use of these two kinds of data analysis are suggested by the data itself, rather than by a methodological framework which locates quantitative and qualitative research as necessarily complimentary processes (Snyder, 1995). Erickson (1986) eloquently makes the point for the complementarity of both explanatory and descriptive approaches to data analysis:

What is essential to qualitative or naturalistic research is not that it avoids the use of frequency data, but that its primary concern is with deciding what makes sense to count-with definitions of the quality of things in social life. ...The trick lies in defining carefully what the facts are in ways that are precise, reliable, and capable of quantitative summary, yet articulate with the meanings the facts have to the people engaged in everyday life (Erickson, 1977: 58-59).

Underlying the interpretive framework of this research is the Derridian deconstructive understanding that meanings, constructed and reconstructed throughout the questioning process by both learners and tutors, as well as the interpretations drawn from these meanings, are not fixed but are subject to re-interpretation, across time and context (Derrida, 1995).

5.3. Procedure

Although the actual course content of each tutorial does not impact the analysis of the data, to facilitate clarity when approaching the data, a brief overview of the first semester Psychology first year course content (discussed in tutorials) is necessary. The first semester of the first year psychology course comprises 4 modules. The first module, **Introduction to Psychology** (Miller, 1996) briefly introduces the learners to the discipline of psychology, focusing specifically on the relationship between content and method in the various psychological perspectives, illustrating how this relationship differs to commonsense methods of enquiry. The second module studied is on **Evolution** (Henzi, 1996). Also an introductory module, the focus here is on the relationship between theory and evidence with Darwin's theory of Natural Selection serving as a paradigmatic example of this relationship. The third module on **Intelligence** (Miller, 1996) compares two different ways of viewing intelligence, the Psychometric approach and the Cognitive (Piagetian) approach. Finally, a module on **Personality** (Gillmer, 1996) traces the development of theories on personality, focusing on the behaviour geneticist position as illustrative

of both a nature and nurture approach to personality development. These modules, then, provide the content base from which tutorial interactions develop.

The first year psychology course is presented as a mixed mode course. Learners are therefore required to approach the text largely on their own. They are invited to attend help-sessions with questions, which they have already formulated for discussion with the tutor. Learners are therefore required to read the text as an 'answer' and, consequently, they are required to generate their own questions around the text. The text itself mediates their entry into university styles of knowing by modelling for learners how to approach tasks, unravelling the epistemic nature of knowledge construction in the social sciences and providing them with extensive feedback to these tasks. Drawing upon Piaget's (1977) conception of cognitive conflict as providing the impetus for learning (cognitive change), Craig (1992) argues that when both the form and content of a task are unfamiliar, the mediational opportunities provided allow for the teaching of new ways in which to engage with the situation. These principles inform the first year Psychology programme where both the form of the tasks (distance learning, heavily textually based and requiring, amongst other things, that learners are able to critically interrogate the text) as well as the content (such as Evolutionary theory) itself is unfamiliar to the learners. By 'defamiliarising' learners, cognitive conflict is provoked, 'propelling' the learners towards developing new strategies for overcoming the conflict. In this way knowledge moves forward, from the familiar to the unfamiliar.

As help-sessions are voluntary, learners are free to attend on any day, and are not required to attend any specific group. Consequently, learners' attendance tends to be erratic, with some learners in fact never making use of these help-sessions. Learners are instructed to bring particular questions regarding course material to these help-sessions. These questions are intended to drive the interaction. As a

result of this inconsistent attendance, actual numbers as well as subject demographics are recorded for each help-session. Interactions were tape recorded by each tutor. The researcher then transcribed these recordings.

1. Tutor 1 recorded 9 help-sessions. Tutor 2 recorded 2 help-sessions. Tutor 3 recorded 4 help-sessions. Each tutorial interaction lasted between 1/2 an hour to 1 and 1/2 hours. Each tutorial interaction used for research purposes was tape recorded and later transcribed. Tutorial feedback sheets, where tutors are encouraged to record their impressions of their interactions with learners were analysed alongside particular taped interactions.
2. Each tutorial interaction was transcribed as soon after the tutorial as possible. The researcher personally transcribed each tutorial interaction, in order to draw impressions, meanings and further questions from the transcription.
3. Once transcribed, the data was analysed, with data being sorted into particular categories. These categories were suggested by the data itself. A coding schedule was constructed to aid in coding the data. A consequence of deriving categories from the text and not imposing previously formulated categories onto the text was the constant revision and refinement of the coding schedule (Cazden, 1986).

A final point regarding reflexivity in terms of the researcher's position must be made. In this research, the researcher occupied two positions; as researcher and as tutor. It is acknowledged that the researcher has the power to reconstruct the tutorial interactions meaningfully in her role as researcher (Mischler, 1986). However, her role as tutor must inevitably influence her interpretation of the data. Therefore, in an effort to ameliorate this effect and address the asymmetrical power relations that invariably form part of the tutorial process, the researcher attempted to elicit thick descriptions from the actual data (Denzin, 1989). In this way it was hoped that wherever interpretations were made regarding the processes underlying the kinds of questions asked by learners, these would be as fully supported by the data as

possible. Having said this, however, it is recognised that the context in which experiences are constructed/reconstructed (in this case the tutorial interaction) can affect the meanings attributed to these experiences (Mischler, 1986). In light of this, the nature of the tutorial interaction and its effects on the construction of meaning, is itself analysed in the discussion.

5.4. Subjects

Since the study sets out to examine dialogical tutorial interactions in the specific context of first year help-sessions run by the Psychology department, the subjects involved are first year psychology learners who make use of the help-sessions and three first year tutors who run these sessions and who volunteered to participate in this research. Large numbers of heterogeneous learners, with vastly different learning histories, mitigates against compulsory tutorials, which would require all learners to work at the same pace. Therefore, to accommodate various levels of preparedness, help-sessions are voluntary. First year learners are therefore not required to attend regularly.

Subjects were identified in terms of whether they spoke English as a first or second language. Of the 502 students registered for the Psychology 1A course, 385 were English first language students and 117 were English second language speakers. Of the 502 first year psychology students enrolled at the University of Natal, 70% of English second language (hereafter L2) speakers attended at least one tutorial session while only 23% of English first language (L1) speakers used the tutorial system (Lemmon, 1999). Although attendance at help-sessions is voluntary, tutors participating in this research identified learners who attended regularly and were willing to participate in this study, and recorded these specific interactions. As tutors are required to keep detailed records of the learners they interact with at help-sessions a profile of the subjects for the present study was generated. All tutors

participating in this research were L1 females. For the purpose of this study, 15 tutorials were taped and transcribed. Subject profiles generated across these 15 tutorials suggest that they are reflective of the larger learner attendance patterns. Table 1 presents the subject profile for this study.

TABLE 1: SUBJECT PROFILE FOR PRESENT STUDY

LANGUAGE	GENDER	ATTENDANCE AT TUTORIALS	ATTENDANCE AT TUTORIALS (%)
L2	Female	93	64%
L2	Male	21	15%
L1	Female	21	15%
L1	Male	8	6%
TOTAL		143	100%

Table 1 indicates that the majority of learners attending the tutorials forming part of this study are second language women (64%). L1 females and L2 males represent the second largest group attending tutorials ($f=15\%$). Of those attending tutorials for this study, 79% were L2 learners. Attendance of L1 males is particularly poor, with L1 males representing only 6% of those learners attending tutorials for the present study. Overall, 21% of all the learners attending tutorials for this study were L1 learners.

5.5. Analysis:

Analysis of the data aimed at 1) identifying what kinds of questions learners ask and what responses these questions elicit from tutors, focusing on whether these questions open or close enquiry 2) identifying tutors' questions and the responses

they elicit from learners, focusing on the extent to which tutors' questions open or close enquiry and 3) working from these questions to uncover the epistemic assumptions informing tutors' and learners' questioning strategies. Analysis was carried out at two levels: 1) a quantitative analysis and evaluation of the data in terms of particular categories and 2) a qualitative elaboration of the trends identified in the quantitative analysis. At the point of analysis, a categorical framework was imposed upon the data to order it more effectively. The categories identified were suggested by the data itself. This identification of categories arising from the data and not from a pre-determined coding schedule is based within the descriptive tradition (Cazden, 1986). During analysis various categories were uncovered; however, for the purpose of this research certain basic categories that reflected general trends in the data were selected for interpretation and discussion. Tutor questions and the learner responses they elicit and learner questions and the tutor responses they elicit were selected as units for analysis. Therefore, the dialogical interaction between the tutor and learners, provoked by questioning, provides the unit for analysis. Further, the textual nature of the data lends itself to analysis that draws on the hermeneutic tradition of interpretation.

5.5.1. Quantitative Analysis:

A premise of this research is that questions represent manifest products of underlying generative structures or epistemological bases. As such, questions provide 'windows' to these hidden processes, suggesting an analysis that explores questions as both a manifest product as well as indicators of hidden cognitive structures. The purpose of the quantitative analysis was to:

1. Identify common learner question and response strategies across tutorials, ascertaining what kinds of questions learners ask in help sessions and what kind of responses tutors' questions elicit in learners. The question and response

- categories identified above were captured in terms of frequency of questions and responses. Trends identified in the data were then qualitatively interpreted.
2. Identify common question and response strategies employed by **tutors** across tutorials, ascertaining what strategies facilitate active learning, with a particular focus on the kinds of questions used to provoke (open) or inhibit (close) learning.
 3. Comparisons between learners' questioning and response strategies and tutors' questioning and response strategies aimed at uncovering different epistemic bases informing tutors and learners, pointing to differences in levels of familiarity with the critical demands of textuality between tutors and learners, suggestive of different underlying epistemic assumptions.

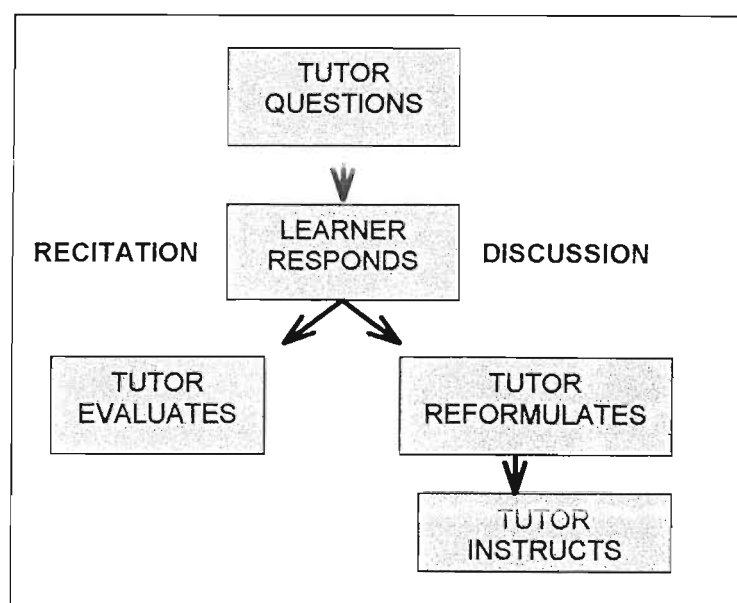
However, trends identified in the data merely point out (expected) differences between learners' and tutors' familiarity with textually based knowledge construction, without providing explanations of why such differences exist or where future educational interventions should be aimed. Therefore, quantitative trends identified are subjected to a qualitative analysis in order to provide what Denzin (1989) calls 'thick descriptions' of the data.

5.5.2. Qualitative Analysis

Thick descriptions of the quantitative trends aim at providing an explanatory basis from which to make sense of learners' question and response strategies in relation to tutors' question and response strategies, enabling explanation to work from the product (the question) to the generative processes underlying that production (Denzin, 1989). It is hoped that an understanding of the processes underlying learners' critical stance in relation to textuality will provide a foundation for developing future tutorial interventions. Initially the data was analysed in terms of very broadly defined tutor and learner strategies (See Appendix A). Each meaningful utterance was treated as a unit of data and coded accordingly (Tannen, 1984). An utterance was identified as meaningful if it was capable of being understood out of its specific

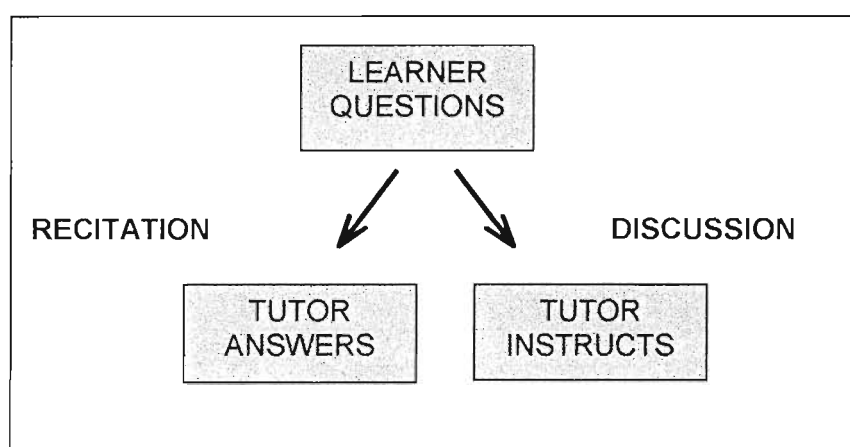
context. Coding each utterance as a unit of data generated a profile of both tutor and learner strategies for the discourse as a whole. However, as the specific focus of this research is the dialogical interaction that develops between tutor and learner that is provoked by questioning strategies, the coding schedule was ultimately refined to focus only on tutor and learner questions and responses. As tutor questions elicit certain learner responses and learner questions elicit certain tutor responses, the unfolding dialogue between learners and tutor was treated as a 'unit' of analysis. Therefore, although separate tutor and learner questions were coded and ultimately categorised, it is the dialogue which is being constructed by means of questions and responses that provides opportunities for interpreting the data meaningfully (Shepherd, 1998). The interaction between tutor and learners is graphically represented in figure 1 below. In figure 1 we can see that the tutor asks learners a question, to which they respond. Depending on the learners' response, the tutor can either evaluate the learners' response, closing off further enquiry. This is the kind of interaction that characterises recitation. Or the tutor can reformulate the learners' response and then begin to open discussion by giving instruction. This is the kind of process that characterises discussion.

Figure 1: TUTORS' MODE OF INITIATING INTERACTION



Although tutors tend to dominate talk time, learners do initiate interaction. Figure 2, below, illustrates how learners' initiate interaction. What the figure demonstrates is the responses that learners' questions elicit from tutors. The first kind of response is a direct answer, one that closes enquiry. Tutors predominantly use this response strategy when answering administrative questions. The second kind of response learners' questions elicit from tutors is a teaching response. This kinds of response opens discussion.

Figure 2: LEARNER'S MODE OF INITIATING INTERACTION



5.5.3. Identification and grouping of categories

As this research is predominantly interested in learners' and tutors' questioning strategies, categories were identified that reflected the kinds of questions that predominate in tutorials. Although the focus of this research is on questioning techniques, during the coding process it became apparent that the kinds of tutor responses elicited by learners differed markedly from the kinds of responses learners gave to tutors' questions. This tentative finding suggested the need for analysis of response strategies. Further, earlier (page 115) we noted that particular questions elicit particular responses, indicating that the dialogue initiated by a question should be analysed as a unit of interaction. Consequently, response strategies for both tutors and learners were also grouped into categories. As tutor questions elicit

learner responses, the categories that follow illustrate this relationship. The following tutor questioning categories were identified:

TUTOR QUESTION CATEGORIES:

TUTOR QUESTIONS (T.Q)		DEFINITION
CATEGORY 1: CLOSED QUESTIONS		
	TQ 1A	Leading questions
	TQ 1B	Rhetorical questions
	TQ 1C	Factual questions
CATEGORY 2: OPEN QUESTIONS		
	TQ 2A	Relational questions
	TQ 2B	Implication questions
CATEGORY 3: METACOGNITIVE QUESTIONS		
	TQ 3A	Reformulation questions
	TQ 3B	Repetition of question
CATEGORY 4: GROUP- COHESION QUESTIONS		
	TQ 4A	Monitoring questions
	TQ 4B	Group response questions

CATEGORY 1

CLOSED QUESTIONS

Questions were categorised as closed if they exhibited the following features:

1) they elicited closed responses, closing enquiry and/or 2) they did not elicit a response from learners and 3) they prematurely closed discussion in an answer.

Those questions that closed enquiry, preventing further discussion were grouped together under category 1. The following tutor question strategies were grouped together to form a single category:

Leading (TQ 1A) or 'fill in the gap' type questions are questions that require essentially closed answers from learners. The tutor gives learners clues as to what the answers is or points out where they can find the answer. Inference may be used. For example:

"Tutor 1: We've already said that the evidence of evolution is..."

Group: Fossils"

Rhetorical (TQ 1B) questions are not intended to elicit a response from the learners.

Rather, the tutor answers the question herself. For example:

"Tutor 1: What is variation? Differences in individual characteristics".

Factual (TQ 1C) questions have a single, factually correct answer. They are puzzle type questions, which do not require that learners weigh up different positions and/or theories to arrive at a correct answer (Strohman-Kitchener, 1983). They tend to form the basis for recitation, and are often used to evaluate learners' knowledge of the topic.

An example of a factual question is:

"Tutor 3: So, what kind of theory is the five factor model?"

CATEGORY 2

OPEN QUESTIONS

Questions were categorised as open if they exhibited the following features 1) they opened discussion by eliciting open responses and/or 2) they opened enquiry by critically probing the implicit logic of textual arguments, highlighting relations between different facts within the text. These kinds of questions are intended to open up enquiry, shifting learners' understandings from the familiar to the unfamiliar. These are Strohm-Kitchener's ill-structured problems, requiring the ability to evaluate evidence for particular claims. The following types of open question (relational and implication) are not typical of dialogue. Rather, they are specifically textual in nature. These are the kinds of questions one must be able to ask when approaching text, interrogating the implicit relationships that text weaves together. As these questions are essentially textual in nature, they require that the learner is familiar with the demands of textuality.

The following types of tutor questions were grouped together as representative of open questions:

Relational (TQ 2A) questions probe the learners' knowledge base and are aimed at developing the learner's understandings. These are understanding type questions and consequently, they require more than a simple factual answer. Essentially what these kinds of questions do is explicitly draw connections between parts of the text for learners. Where learners are unable to spontaneously draw these textual connections themselves, these relational questions open text for learners by making these connections explicit. There may also be more than one strictly correct answer to these questions. These kinds of questions aim at provoking 'perplexity' in learners (Dillon, 1988).

"Tutor 1: ...but how does Mendel's experiments relate to problems, which Darwin faced?"

Implication (TQ 2B) questions essentially unpack the logic of the argument, prompting the use of speculation to deduce relationships between pieces of evidence. While relational questions unravel connections that appear in the text, implication style questions seek to unravel what is not explicitly said in the text. That is, they draw learners' attention to what is left unsaid. These kinds of questions not only open up discussion, they also model for learners how to appropriately approach textually based knowledge, illustrating how one develops a critical or questioning stance towards text.

"Tutor 1: Each time there was a catastrophe shew, wiped out the species. Bye bye species. What's wrong with that?"

"Tutor 1: I mean, imagine if you're guilty of a crime and you go to court. Does the judge just say- oh well I don't like your face that's fine you're going to jail?"

Patrick: no!

Tutor 1: No! What do they have to have?

Group: evidence!"

CATEGORY 3

METACOGNITIVE QUESTIONS

Questions were categorised as metacognitive questions if they exhibited the following features 1) they reformulated learners' questions and/or responses, modelling the appropriate questioning stance required to engage in academic enquiry and 2) the question was repeated to direct learners' attention. In order to promote self-regulation in learners, constructive feedback is essential. Where learners do not evidence control over the task, the tutors' questions can model how learners should question the task/text. This is a meta-level question, that models appropriate questioning strategies required for gaining control over the task. Feedback models for learners the correct 'moves' required to arrive at the right answers. The following tutor questions were grouped together as representative of feedback style questions: **Reformulation (TQ 3A)** questions direct the learner towards the correct answer. By reformulating the learner's question, the tutor models a more appropriate questioning format.

"Student 4: Is it not communicating the language, the introduction?"

Tutor 1: Hmm. Ok, is the introduction communicating the information? It is but not in this sense..."

Repetition (TQ 3B) questions are questions where the tutor repeats her question in order to highlight a particular point or direct learners' attention to important facts:

"Tutor 3: And what does it say? What does it say...?"

CATEGORY 4

GROUP COHESION

Dillon (1986) notes that getting learners involved in the developing discussion is a crucial first step to learning (see also chapter 4 page 85). Inviting learners into the discussion is an important starting point from which to develop the interaction.

Further, in order to monitor learners progress, the tutor must continually check

whether learners understand her explanations. Inviting learners to participate together with constant monitoring of their progress facilitates a sense of group cohesion. Questions were categorised as group cohesion questions if they exhibited the following features: 1) the question elicited feedback responses from learners, enabling the tutor to monitor learners progress and 2) the question elicited a response from the group, inviting learners to engage in the discussion.

Feedback (TQ 4A) questions are aimed at ascertaining whether the learners are satisfied with tutor's answers to their questions. These questions provide feedback to the tutor regarding the learners progress as well as the tutor's 'teaching' ability. These kinds of questions are crucial for tutors to monitor their tutoring.

"Tutor 3: Did you understand that?"

Soliciting group response (TQ 4B) questions invite learners to participate in the discussion. The tutor may achieve this by giving clues as well as inviting responses. This questioning technique facilitates collaborative group work, with learners working together to achieve the answer. Thus peer interaction is used to provoke discussion and learning.

"Tutor 1: Anybody? Yes?"

LEARNER RESPONSE CATEGORIES:

LEARNER RESPONSE (L.R.)		DEFINITION
CATEGORY 1: CLOSED RESPONSE	LR 1A	Direct answer
	LR 1B	Repetition
	LR 1C	Group response
	LR 1D	Responds with a question
CATEGORY 2: FEEDBACK RESPONSE	LR 2A	Use of examples
	LR 2B	Feedback
CATEGORY 3: ACTION RESPONSE	LR 3A	Works on a task/text/test during the tutorial

CATEGORY 1

CLOSED RESPONSE

Closed responses end enquiry and close discussion. The following learner responses were grouped together to form this category:

Direct answers (LR 1A) to tutors' questions from the learners aim at closing enquiry.

"Tutor 3: What did you say type is?"

Student 1: I said that a thing that was discrete"

Repeating (LR 1B) the tutor's question/answer or repeating their own or another learner's question/answer.

"Tutor 3: So a third container.

Student 1: Third container. So you pour the one container into the third container, so that the levels of water will be low."

A group response (LR 1C) enables individual group members to participate in the discussion in a relatively face saving (anonymous) manner.

"Tutor 1: What characteristics can't be passed on, not genetic..."

Group: Acquired."

Respond to a question with a question (LR 1D). These kinds of responses are usually queries about the question, most often they are responses that seek clarity. Although sustaining the discussion, they are not open responses, as they ultimately seek to clarify what the tutor has asked rather than pursuing the tutor's question.

"Tutor 1: Ok, what about this next heading, embedded and disembedded thinking.

What does this mean?"

Student 1: Embedded?"

CATEGORY 2

FEEDBACK RESPONSE

Using examples (LR 2A) Sometimes learners will **use examples** of their own to illustrate their understanding of theoretical concepts.

"Student 2: I think an example would be a bushman who's always lived out in the bush confronting television because they would have never ever seen this".

Feedback (LR 2B) is a direct response to the tutor's feedback questions (T.Q.8), providing the tutor with **feedback** regarding her explanations.

"Tutor 1: ...Does that help you?"

Student 1: Yes."

CATEGORY 3

ACTION RESPONSES

Acting on the text/test/feedback (LR 3A) Learners completes a written task during the tutorial.

LEARNER QUESTION CATEGORIES

LEARNERS QUESTIONS (L.Q.)		DEFINITION
CATEGORY 1: CLOSED QUESTIONS	LQ 1A	Linguistic clarification questions
	LQ 1B	Factual questions
	LQ 1C	Administrative questions
CATEGORY 2: OPEN QUESTIONS	LQ 2A	'borrowed' questions

CATEGORY 1

CLOSED QUESTIONS

These kinds of questions close enquiry, rather than facilitating open discussion. Learners rely heavily on these types of questions. The following learner questions were grouped together under this category:

Linguistic clarification (LQ 1A) questions, refer to queries regarding the meaning of English words.

"Student 1: 'Type theories are now 'outmoded'', what does that mean?"

Tutor 3: Outdated, it's old."

Factual (LQ 1B) questions are aimed at checking facts and are predominantly content questions. These factual questions can easily be answered as they refer to established 'facts'. These types of questions have readily agreed upon single right or wrong answers.

"Student 5: So they are same structure but different function because of environment?"

Tutor 1: Yes."

Administrative (LQ 1C) questions are predominantly about when assessment will happen, with learners constantly checking information regarding test/exam dates.

"Student: so the test is in our lecture period?"

CATEGORY 2

OPEN QUESTIONS

Although ostensibly similar to the open questions asked by tutors, these questions are in fact questions borrowed from tasks or previous examinations or tests. Consequently, they are not open in the sense that tutors' questions are. While tutors' open questions demonstrate a familiarity with textuality and consequent acknowledgement that knowledge is constructed by opening enquiry, learners' open questions are posed in order to elicit an answer, that is, in order to close enquiry. Therefore, tutors' use of open questions illustrates that they know what the purpose of asking these kinds of questions is; to open enquiry. Conversely, learners' use of open questions illustrate that learners do not know how to use these questions to provoke enquiry. So, while these learner questions are academic open questions (borrowed from academic texts, tasks and examinations), they do not exhibit learners' ability to effectively interrogate text. They are questions that ask for some sort of boundary or limit to be set by the tutor. That is, they are posed in order to close enquiry in an answer. Consequently, they evidence a desire to ground knowledge in a single authority, either the tutor or the text.

Borrowed questions (LQ 2A) illustrate learners' inability to set boundaries on textual knowledge or focus on relevant information. They indicate learners' use of blurred and sweeping perception. According to Feuerstein blurred and sweeping perception reflects "a poverty of details or their lack of clarity, a poor quality of sharpness, an imprecise definition of borders and an incompleteness of the data necessary for proper distinction and description" (1980: 76). These kinds of questions characterise underprepared learners questioning in relation to text. 'Perplexity' underlies these questions, providing the impetus for asking (Dillon, 1986). Thus, these types of questions' illustrate that the learner has at least some understanding, even if that understanding is simply the knowledge that they do not adequately grasp the topic, leading to 'perplexity' and the formulation of a question. This kind of question does however elicit teaching from the tutor. These are often posed as sweeping questions that demand some 'limit setting' or narrowing response from the tutor, for example:

"Patrick: can you explain for me the details of the Catastrophism?"

Tutor 1: Ok, Catastrophism."

These questions may be posed as :1) How questions: How does Mendel's theory relate to Darwin's theory? This kind of question could reveal an underlying inability to conceptualise the relationship between these two theories; however, it could also reveal an inauthentic questions, one that the learner has 'borrowed' from the tasks. 2) Why questions: Why do we study evolution if we want to be psychologists? (What's the relationship between evolutionary theory and psychology)? These kinds of questions can only be fully appreciated when submitted to deeper, more meaningful qualitative analysis.

TUTOR RESPONSES :

TUTOR RESPONSE (T.R)		DEFINITION
CATEGORY 1: OPEN RESPONSE	TR 1A	Direct teaching by explaining terms/theories/concepts
	TR 1B	Using metaphors and examples to relate unfamiliar theoretical concepts to the familiar:
	TR 1C	Referring to and reading from text/feedback/student's test
CATEGORY 2: CLOSED RESPONSE	TR 2A	Direct answer: no teaching
	TR 2B	Completes/interrupts learner's response/question
CATEGORY 3: GROUP COHESION	TR 3A	Repetition
	TR 3B	Reinforcement
CATEGORY 4: METACOGNITIVE INSTRUCTION	TR 4A	Modelling: Goes over learner's task/written responses and offers help
	TR 4B	Reformulation

CATEGORY 1**OPEN RESPONSE**

Responses were categorised as open if they exhibited the following features: 1) they opened enquiry by sustaining the asking of a question and 2) they provoked further discussion by means of teaching and/or elaborating on information within the written text. All tutor responses that opened up enquiry, facilitating discussion were grouped under this category. The following tutor responses were grouped together:

Direct teaching (TR 1A) refers to instances where the tutor explains terms/theories/concepts to the learners. For example, explaining the difference between theory and evidence:

"Tutor 1: A theory is your explanation of how it happened..."

Another teaching method used by tutors was 'telling the story', for example the 'story' of evolution:

"Tutor 1: In any population there's going to be..."

Metaphors (TR 1B) are used as a 'teaching' device to relate unfamiliar theoretical concepts to the familiar: For example, the following is an explanation of the term Uniformitarianism

"Tutor 1: Now, let's just think about what uniform means, think about when you go to school and wear a uniform..."

Reading from the text/test/feedback (TR 1C) enables the tutor to 'teach' by referring to particular textual material. Tutors often explain what it is that they have just read, facilitating the learners' engagement with and understanding of the text.

"Tutor 1: In what way does Mendel's work provide empirical evidence in support of Darwin's theory of natural selection?" directly read from tasks

CATEGORY 2

CLOSED RESPONSE

Responses were categorised as closed if they exhibited the following features: 1) they prematurely closed enquiry in a direct answer 2) merely repeated the question and/or answer, closing rather than opening discussion. Closed responses, where the tutor directly answers the learner's question without further elaboration, do not facilitate discussion and hence, close enquiry.

A direct answer (TR 2A) supplies the information that learners' questions elicit. In this response the tutor directly answers the learner's questions, no teaching or further elaboration is given.

"Student 2: um, what is variation?"

Tutor 1: What is variation? Differences in individual characteristics."

Interrupting the learner (TR 2B) does not 'sustain the asking', consequently these responses close enquiry.

"Student 1: So they are saying that it is individual differences, but that there, there is a...

Tutor 3: They are saying that there are a limited number of possibilities to the kinds of personalities there are."

CATEGORY 3

GROUP COHESION

Praise and encouragement are crucial to facilitating self-regulation on behalf of the learners, as well as establishing a 'safe' environment in which to risk asking questions. The following response strategies were identified as group cohesion style responses:

Repetition (TR 3A), where the tutor repeats the learner's question or response or she repeats her response, 'sustains the asking':

"Student :Can you explain for me the details of the Catastrophism?"

Tutor 1: ok, Catastrophism."

Reinforcement (TR 3B) affirms the learners by positively re-enforcing learners' correct answers or good questions. This positive **reinforcement** encourages further participation in the conversation as well as creating a non-threatening learning environment. Validating the learners' questions and answers provides learners with a feeling of competence.

"Tutor 1: Ok, excellent question, excellent question..."

CATEGORY 4

METACOGNITIVE INSTRUCTION

Responses were categorised as metacognitive instruction responses if they exhibited the following features: 1) they modelled an appropriate response, or appropriate means with which to arrive at such a response. When the answer given is incorrect, the tutor reformulates it in a positive, more specific way. By reformulating the question and/or answer, the tutor attempts to focus the learners' attention on the correct answer required. Reformulating the answer and/or question 'scaffold's' the

learners' engagement with the task (Wood et al, 1976). By decreasing the levels of difficulty required to get at the answer, the tutor minimises the cognitive moves required.

Modelling: Going over the learners' task/text written (TR 4A) responses and offering help and corrections, promotes learning by modelling what a correct written task should look like. Here the tutor models how the learners can gain control over the task demands and his/her problem solving strategies in relation to the task.

"Student's question: Because in my understanding I, I understood everything. And shew, after I wrote the test...[shakes her head]

Tutor's response: "Ok, you don't need to say this stuff about Cuvier ok? Um.."

Reformulation (TR 4B): here the tutor reformulates the learner's question and turns the learner's question back to the learner or offers it to the group to answer in order to 'sustain the asking' (Dillon, 1986).

Student 2: Can you please explain for me that theory for Lamarck?

Tutor 1: ...Ok, what is Lamarck's theory? Who wants to tell me what acquired characteristics are first of all?

6. RESULTS

Chapter 6 presents the findings of this study. Data are presented first in a quantitative form, recording the frequency and proportion of different kinds of questions asked by learners and tutors in tutorial dialogue. Second, the general patterns in the data thus established provide the context for qualitative elaboration of the salient features of both learners' and tutors' questioning and the interactive pattern of dialogue established in response to these questions.

6.1. A questioning discourse

Given the critical questioning approach typical of university study, it was assumed that questions would be quite dominant in tutorial discourse. In order to establish how often tutors and learners ask questions, the entire body of discourse was coded. Utterances capable of being understood as 'meaningful' were coded as a unit of discourse (Tannen, 1984). The smallest meaningful units were single words, for example a learner may say "Okay" when asked whether s/he understands the question. Longer units were between 2 and 3 lines long, with the longest unit being 4 lines long. These units are easily identified in the transcribed data by punctuation marks signalling the beginning of one unit and end of another. For example, the following utterance from tutor 1 was coded as a unit of discourse:

Tutor 1: "So whenever you're called upon to give a description of a theory make sure that you just say, very simply, what are the main concepts? "

These units together constitute the discourse as a whole. For the purposes of analysis, questions were taken as the initial entry points into the body of discourse and the interactive construction of dialogue in response to questions was examined. Table 2 presents these data, showing the frequency of tutors' and learners' use of questions in the construction of a learning-teaching discourse.

Table 2¹: The frequency of questioning by tutors and learners

Discourse units	n=	Proportion of overall discourse %
Total Discourse	7108	100%
Tutors' Discourse	5378	76%
Learners' Discourse	1730	24%
All questions	1814	26%
Tutors' Questions	1367	20%
Learners' Questions	447	6%

It is evident from Table 2 that tutors tend to dominate overall talk-time (76% of the total tutorial discourse). Tutors also ask more questions (n= 1367 questions, 20% of the total discourse) than learners (n = 447 questions, only 6% of the total discourse). Given the specific instructions to learners to bring questions to help sessions, the relative dearth of learners' questions (6% of the discourse) is surprising. However, the frequency of questioning provides little more than a context for analysis. Of primary interest are the different kinds of questions asked by learners and tutors and the potential of such questioning to provoke or hinder learning.

6.2. Tutors' Questions

A comparison of tutor and learner questioning styles provides a means for analysing underlying differences and/or similarities in tutors' and learners' approach to university tasks and for critically examining the assumption that questioning plays a crucial role in the learning-teaching process. Table 3 presents the kinds of questions that tutors² ask.

¹ Actual numbers of questions and discourse units are recorded in table 7 in Appendix B.

² Having identified basic questioning strategies across three tutors, frequencies of questioning strategies were recorded. Initially, the researcher had envisaged a comparison between tutors' questioning and response strategies; however, similarities in both questioning and response strategies across tutors make this comparison uninformative. Therefore, different tutors' reliance on essentially similar questioning techniques suggested recording frequencies of questioning styles of all tutors together, in order to compare tutor questioning styles with learners' questioning styles. Appendix B

Table 3: Types of questions asked by tutors

QUESTION TYPE	FREQUENCIES OF QUESTIONS	
CLOSED	n=	%
T.Q. 1A Leading questions	46	4%
T.Q. 1B Rhetorical questions	234	17%
T.Q. 1C Factual questions	399	29%
All closed	679	50%
OPEN		
T.Q. 2A Relational questions	149	11%
T.Q. 2B Implication questions	16	1%
All open	165	12%
METACOGNITIVE		
T.Q. 3A Reformulation	150	11%
T.Q. 3B Repeats question	85	6%
All metacognitive	235	17%
GROUP COHESION		
T.Q. 4A Monitoring questions	147	11%
T.Q. 4B Soliciting group response	141	10%
All group cohesion	288	21%
TOTAL	1376	100%

Although it has been argued (see Chapter 4) that the Human sciences are characterised by open questioning it appears from the results in table 3 that tutors do not rely heavily on open questioning techniques (12%) to facilitate enquiry whereas ‘closed’ questions make up 50% of their questioning. Example 1 below illustrates a tutor’s use of open and closed questions and the responses they elicit in learners.

Example 1: Illustration of a tutor’s use of open and closed questions

Tutor 1... fossils provide evidence in other words, we know that evolution has happened but we need evidence to support us. I mean, imagine if you're, if you're guilty of

presents the data separately for each of the three tutors, demonstrating the similarities in questioning between individuals.

a crime and you go to court. Does the judge just say- oh well I don't like your face that's fine you're going to jail? **(Open Implication question)**

Student 9: No! **(Direct response)**

Tutor 1: No! (Repetition) What do they have to have? **(Closed Factual question)**

Group: Evidence. **(Direct group response)**

In addition to the open and closed questioning that focuses on the content of the course, tutors also use a range of questions that focus on the learning-teaching process itself. A relatively high percentage (17%) of metacognitive questions, reflected in table 3, suggests active modelling or structuring of engagement being carried out by tutors. What begins as external feedback on behalf of the tutor eventually 'turns' inwards, becoming self-regulation (Wood et al, 1976). Reformulating the question (or response) focuses the learners' attention on the specific answer required. Therefore, reformulation acts as a 'scaffold' in that it decreases the level of difficulty required (and consequently the cognitive 'moves' needed) to answer the question. In example 2 the tutor reformulates the learners' question and goes on to model how she should approach the task.

Example 2: The tutor reformulates the learner's question

Student 20: uh, it's this thing, about the tortoise. **(Open question)** ...

Tutor 1: ... Ok, lets go through it ok. How would we approach any question of this nature? **(Reformulation question)***[Pause] ok, we are given a short excerpt. Read it (direct response). Read the excerpt. (Repetition) What is it talking about? (Factual question)**[Pause] it's talking about the Galapagos Islands and giant tortoises (direct response). Two things people! You have to be able to reason and use the logic from evolution even if you are given the examples of something that you haven't actually got in your file, ok. (Modelling) Darwin did actually look at*

Galapagos tortoises and you would know that if you'd done your tasks. This is in your files! But your knowledge of the finches and what happens to finches should have told you 'ah, I know what this question is asking' (Modelling). [The question says] 'Explain briefly how Lamarck would have explained how some tortoises have long necks then explain the variation of different species on different islands using Darwin's concept of natural selection.' (Reads from text) So you've got 3 things to do in this question. (Modelling) First of all you have to tell me what Lamarck is talking about. ... Second thing that you are required to tell me, and look at the words used, 'variation'. What is that? ... (Factual question)

Example 2 illustrates how, in dialogue, a tutor can mediate learners' access to text, modelling how they should approach and answer examination questions. Further, the tutor continues to explicitly unravel the demands of this task, indicating how learners should approach it.

A relatively high number (21%) of questions are used to maintain group cohesion. These kinds of questions aim at monitoring learners' progress and inviting learners to participate in the enquiry.

The kind of questioning employed by tutors requires a more in-depth analysis. In particular, if tutorials are not providing a context in which the open questioning form typical of textuality predominates, what do they provide that provokes or promotes learning? The most effective way to address this question is to analyse the tutorial interaction in terms of the response tutors' questions elicit from learners. It is this dialectically constructed interaction between tutor and learner that provokes or hinders learning.

6.3. Learners' Responses

Table 4³ presents the nature of learner responses to different kinds of tutors' questions.

Table 4: Learner response to different kinds of tutor questions.

Tutor Question		Closed response				Feed back	Non-response
		LR 1A Direct answer %	LR 1B repeat %	LR 1C group response %	LR 1D asks question %	LR 2B feed back %	%
Closed	TQ1A	80	0	18	2	0	0
	TQ1B	0	0	0	0	0	100
	TQ1C	64	3	15	7	0	11
Open	TQ2A	60	4	5	9	0	22
	TQ2B	36	0	0	7	0	57
Meta-cognitive	TQ3A	68	11	5	10	0	6
	TQ3B	63	0	8	4	0	25
Group Cohesion	TQ4A	8	2	1	11	70	8
	TQ4B	27	0	26	41	0	6

The most striking feature of the data in table 4 is that regardless of the kind of question posed by the tutor, learners tend to respond in a way that aims to close enquiry. It is immediately clear from Table 4 that when asked closed questions (TQ 1A leading questions and TQ 1C factual questions) learners' predominantly produce direct responses (80% and 64% respectively). Example 1 below illustrates a leading or fill in the gap style question and the kind of response it generates.

Example 1: Closed tutor questions elicit closed learner responses

Tutor 1: ... What characteristics can't be passed on, not genetic...(leading question)

Group: Acquired. (Group response)

³ Actual numbers of learner responses are recorded in table 11, Appendix B.

The only educational purpose the leading question serves in this interaction is to explicitly guide the learner to the correct answer. Example 1 illustrates how these kinds of questions can close enquiry, eliciting a closed (direct answer) response from learners and resulting in no further opening strategies from tutors. Example 2 illustrates a factual question posed by a tutor that elicits a closed response from the learner:

Example 2: Tutors' factual questions elicit closed learner responses

Tutor 1: ... What is Lamarck's theory? (Factual question) What is it called? (factual question)

Student 3: Inheritance by acquired characteristics. (Direct response)

Table 4 also indicates that certain kinds of questions elicit no response from learners, rather tutors use their own questions to develop a question-answer interaction in which a narrative is constructed. This is especially true of TQ 1B, a rhetorical questioning strategy that elicits no response from learners. By posing rhetorical questions and answering them herself, the tutor generates a text, very often reworking and simplifying sections of the written module texts, directing students reading by producing her own expert reading. Rhetorical questioning (TQ 1B) may therefore be viewed as a teaching technique rather than an authentic question. Although TQ 1B, a rhetorical question, is closed in structure, it may in fact open up teaching possibilities. Example 3 illustrates that the tutor's use of rhetorical questions elicits no response from the learners but opens up possibilities for teaching factual content.

Example 3: Rhetorical Questions (TQ 1B) elicit a non-response but provide possibilities for teaching

Tutor 1: ... Ok, only when there is competition, when there's not enough resources then we start to worry because I want food, you want food we all want food, who's

gonna get it? (Rhetorical question) The one with the successful characteristic, the variation in his beak, ok. (Direct answer)

When we examine the pattern of response to open tutor questions in table 4 (TQ 2A implication questions and TQ 2B relational questions) it is again apparent that responses are predominantly closed (LR 1A direct answers) in nature (60% and 36% respectively) or not forthcoming at all (22% and 57% respectively). Example 4 illustrates how tutors' open questions elicit closed learner responses.

Example 4: Learners respond to open questions with closed responses

The group is discussing Cuvier's theory of evolutionary change. The tutor is attempting to get learners' to think about reasons why Cuvier's theory is not logically sound. By pointing to the fact that Cuvier's theory cannot explain the gradual change evidenced in the fossil record, the tutor attempts to illustrate how improbable it is that species, wiped out by a catastrophe, would be replaced by species evidencing little structural change, that is, species that look similar.

Tutor 1: ... remember there was a theory, the antediluvian theory which was the flood theory, and that was not his theory, that was a theory that said that all these fossils should come from one time and they should come from before the flood. ... Because Cuvier was saying basically, that every time there was a catastrophe, um, god was wiping out a whole species and improving on that species, creating a new one that was slightly better than the one that had gone before. But this doesn't explain the gradual change that is shown in the fossils. I mean you saw that skull, that is millions of years old. But it looks like something even you can recognise. It looks like a human skull. Now you can recognise it. How come? How come? How come if god is getting rid of species and putting new species on the world, how come he makes them so similar? (Implication question) Ok. So.

Student 6: They are similar, they are similar? (Answers a question with a question)

Tutor 1: They are similar but not the same. (Direct response)

Student 6: That mean god can. That my idea. (Direct learner response)

Tutor 1: Hmm. No, and that's fine, from a religious point of view (Direct response). ...

And it's not because god can't make people more perfect, no, no, no, it's not because of that. Nothing to do with that, it's got to do with why Cuvier couldn't explain properly how come the fossils are so similar (teaching). ... It wasn't good enough to say that there were these big catastrophes because even in the bible it doesn't say that, so even in terms of the biblical records this wasn't the best explanation possible. (Teaching)... But we must see that you can move to a better theory, better, better all the time. We want to get the best theory possible. (Teaching)

Student 6: Oh, he was attempting according to his understanding? (Factual question)

Tutor 1: Yes, mm. (Direct response)

Student 7: And he came with that god created another species but he couldn't explain why god didn't create another dinosaurs? (Factual question)

In example 4, the tutor tries to use an implication style question to enable learners to unpack the underlying logic of the situation, the learner however, responds literally, seeking to close the discussion by fixing a 'correct' answer authoritatively guaranteed by god. The fact that learners seek to close, as opposed to open enquiry represents a general trend across the data. Example 4 is particularly interesting as it points to possible reasons why learners seek to close enquiry; such 'closure' implies that the learner believes that a 'true' answer does exist and can be known. Thus, this type of closed response provides a window into the epistemic assumptions that inform learners' engagement with academic enquiry. However, the tutor is able to respond, drawing the learner back into the academic debate, opening the enquiry again. As the tutor begins to

unravel the logical implications of this theoretical stance, she begins explicitly to model a critical stance towards knowledge construction (underlined), providing a view of her own epistemic assumptions regarding knowledge; namely that it is produced by critical enquiry.

Metacognitive questions (TQ 3A reformulation questions and TQ 3B repetition) similarly tend to elicit predominantly closed responses from learners (68% and 63% of responses respectively). The only kind of questioning that elicits a different kind of response from learners are those aimed at establishing group cohesion. TQ 4A, a specific monitoring question, aimed at ascertaining whether learners have understood the tutor's explanation, elicits feedback responses (LR 2B) from learners 70% of the time.

Table 4 further illustrates that learners' sometimes respond to tutors' questions by posing their own questions (LR 1D)⁴. Such questioning responses are relatively rare in relation to most question types but quite frequent (41%) in response to TQ 4B, a questioning strategy intended to elicit a group response. It appears, therefore, that soliciting a group response (TQ 4B) may be an effective strategy for getting learners to pose their own questions. Therefore, a direct invitation to join the discussion appears to be very well received by learners. The types of questions learners pose in response to this question are however, predominantly closed (LQ 1B factual or clarification) questions. Learners seem to use the tutor's invitation to join the conversation to ask questions about unfamiliar content.

⁴ Note, to facilitate clarity, in table 4 LR1D represents a composite of various questioning responses elicited from learners. This finding is elaborated in table 12 in Appendix B.

By focusing on the response to tutors' questions one begins to detect a distinct approach to questioning on the part of learners, in which they seek to close enquiry, regardless of the kind of question posed. 'Opening' up enquiry, then, may depend on how the tutor responds to learners' answers, rather than on the initial formulation of a particular kind of question for teaching. The unfolding development of the discourse initiated by tutors' questions is explored below.

6.4. Opening Enquiry: The relationship between tutors' questions and learners' responses

In this section of the analysis we examine how tutors' develop and sustain a process of interaction initiated by questions. As noted in chapter 5 (figure 2) the possibilities for learning-teaching do not end with learners' responses to tutors' questions. Rather, it is the tutor who determines whether enquiry will progress.

Although clearly relying heavily on closed questions ($n=679$, 50%) to initiate interaction, tutors do also use open questions (relational, $n=149$, 11% of the all questions and implication, $n=16$, 1% of all questions) to provoke discussion (see table 3). Facilitating a discussion is not easy in a first year tutorial group. Very few examples of genuine discussions, in which learners and tutors participate equally in generating understandings, are evident in the data. This scenario, requiring a certain level of shared understanding, is very different from the type of interaction engaged in tutorials, namely mediation, where the tutor actively initiates learning, by shifting learners from prior inadequate understandings to new understandings (Miller, 1994).

The usefulness of open questions depends largely on the learners' active involvement in the discussion. Therefore, where learners are not adequately prepared to

engage in discussion, open questions are severely limited because of the non-response they elicit from learners. The learners' engagement then, either facilitates the tutors' use of open questions or not. Example 1 illustrates that tutors' open questions may elicit a non-response from learners, threatening to end enquiry.

Example 1: Tutors' open questions do not elicit a learner response

Tutor 1... So he says there were various different catastrophes, not just one flood. Many catastrophes. And each time -wiped out the species. Each time there was a catastrophe shew, wiped out the species. Bye bye species. What's wrong with that? (Implication question) Just think about it logically. Don't think in terms of the textbook. Just think. All of you know what's wrong with that. I'm telling you, you know. There's a great catastrophe, all of the species are wiped out.

(Repetition) What's wrong with that? [5 minutes: LONG PAUSE]

Student 2: Where did the new ones come from? (Learner responds with a question)

Tutor 1: Ok Cuvier said god created a whole new species each time he created a new species. (Direct response)

Student 2: So, species, god created the species is the same as that that was sent away by the flood or different? (Factual question)

Tutor 1: Exactly, that's the question, that's the question... (Reinforcement) So now, if there's a catastrophe and god wipes out all the species and then puts a new species on the planet, why does he keep them similar? (Rhetorical question) Well Cuvier couldn't really explain it. (Direct response) He didn't really have an explanation for these fossils and why they resemble living creatures.

This example suggests possible reasons why tutors' do not ask many open-ended questions; learners simply do not engage effectively with these kinds of questions. The long pause (5 minutes), recorded after the tutor has asked her question illustrates learners' initial inability to engage with this kind of logical implication. Clearly, if learners

are unable to pursue a line of reasoning, communication breaks down and enquiry is closed. Hence, where learners are unable to grasp the tutors' use of open questions, they do not respond. Failure to respond threatens to break down communication. Consequently, tutors very seldom use open questioning techniques to open enquiry. In example 1, when student 2 does finally respond to the question, he is not seeking to open enquiry, but rather wants to obtain a final, closed answer from the tutor by asking her where the new species "come from"(line 8). Hence, the student is not dealing with the tutor's question, but rather shifting the conversation to close enquiry in an answer. The tutor's response however, rather than closing enquiry, prompts another question from the student. However, the student's second question is also a closed question, seeking a closed response from the tutor. The tutor does not respond by closing enquiry, though. She goes on to reformulate the learners' question as an answer; the answer that she was initially looking for. So, it is the tutor who actually answers her own question. Although the tutor attempts to implicate the learner in the correct answer, it is not clear that the learner has engaged with the tutor's initial question. Note, the answer that the tutor was initially looking for was in fact a critical question: "if there's a catastrophe and god wipes out all the species and then puts a new species on the planet, why does he keep them similar?" (Line 14-15) The tutor appears to think this question flows logically from the text and hence, she assumes learners would necessarily pose this kind of question. However, unfamiliarity with the critical demands of academic enquiry results in learners' asking questions that are not critical. In fact, it is not clear that student 2 was aware that the textual argument is flawed. Clearly, where text is seen as an authority, a learner is not going to actively question what s/he reads in the text. In this instance, the tutor could have given learners a closed answer, denying learners access to the process of enquiry unfolding. However, by answering her own question, the tutor is modelling how learners should critically approach text, questioning that which does not make

sense and developing the argument by implication or by reading the 'unsaid'. The fact that the tutor's question was attempting to elicit a critical questioning stance from learners, and that it fails to elicit this response, points to learners' underdeveloped critical abilities in relation to text.

However, using open questions to provoke enquiry is not the only way that tutors promote learning. Tutors' make use of metacognitive questions in order to teach learners how to engage with tasks, by reformulating their questions and modelling appropriate questioning strategies. Example 2 illustrates how reformulation serves as a scaffolding device.

Example 2: Reformulation as a scaffolding device

The forthcoming coursework essay is being discussed.

Student 4: Is it not communicating the language, the introduction? (Factual learner question)

Tutor 1: Hmm. Ok, is the introduction communicating the information? (Reformulation question) It is but not in this sense, it is not in this sense, for this essay a function of language (direct answer). Ok. It is not a function of language in this, in this reading here (teaching). Questioning, questioning is a function of language. What, what do you do when you question? (Factual tutor question) Now remember you've got to relate this function of language to 2 things, representation and interaction. (Teaching) So let's go to pg. 263. .264, 264 (Refers student to text). And now you're going to answer how does this link, how does questioning link with representation and interaction? (Relational question) Ok. How does questioning as a function of language enable us to represent the world? (Repetition of question) Read the 2nd paragraph on 264. (Refers student to text)

In this example, the tutor reformulates the learner's question and goes on to guide the learner's engagement with text by specifically reading the text with the learner. By directing the learner to specific pages, the tutor models the correct moves required to arrive at a good answer. Further, the tutor repeats her question in order to direct the learner to focus on a specific issue. However, although reformulation is predominantly used to scaffold learners' engagement with the written text, reformulating learners' questions does not always serve a scaffolding function as example 3 illustrates.

Example 3: Reformulation does not always serve a scaffolding function

The group is discussing problems associated with bipedality.

Tutor 1: Ok and what, so what happens if we walk on 2 legs? (Factual question) What is one of the things associated with walking on 2 legs?

Student 4: We are going to check more weight if, if we was walking 2 legs. (Direct response)

Tutor 1: Backache? (Reformulation question)

Student 4: Ja, backache. (Repetition)

In the above exchange, the tutor reformulates student 4's answer completely (underlined), without checking whether the learner intended to say 'backache'. Student 4 responds affirmatively, yet it is not clear that this was in fact what she meant, although this is the meaning the tutor inferred from her answer.

Earlier (see chapter 4) the importance of providing learners with a space in which to ask questions, was noted. Consequently, in order to facilitate learners' questioning, tutors ask group cohesion questions which aim at maintaining the tutorial interaction. Both metacognitive and group cohesion questions are process type questions, indicating that tutors' structure the tutorial dialogue, actively guiding learners' engagement with

focal conceptual issues. Example 4 illustrates how a tutor's use of a group cohesion question elicits a questioning response from the learner, opening enquiry.

Example 4: A group cohesion question opens enquiry

The tutor has just been explaining various fossils, attempting to indicate that the fossil record contains many species, not just dinosaurs, as some learners had thought.

Tutor 1: ... Yes, (student's name), are you smiling? Is that ok? (Monitoring question)

Student 4: So you are saying that not only the dinosaurs were fossils but there were many different types? (Learner responds with a question)

Tutor 1: Yes. (Direct response)

Student 4: Ok.

Tutor 1: And you know Peter Henzi showed us in the lecture that was a skull he showed us, wasn't it? (Leading question)

Group: Ja (group response)

Tutor 1: Do you think that was a dinosaur skull? (Factual question)

Group: No. (group response)

In this example the tutor's use of a monitoring question elicits a questioning response from the learner. Note that this learner question is essentially seeking clarity and is posed as a closed question. Consequently, it elicits a closed response from the tutor. However, discussion does not end there. Rather, the tutor asks further questions to engage the group in the discussion. The closed questions used by the tutor in example 4 are used to demonstrate, with the help of an experiential example, that dinosaurs are not the only types of fossils found.

6.4.1. Opening enquiry: Closed questions that open?

Patterns in the data indicated that tutors seldom use open questions (12%) and closer analysis indicates that the possible reason for this is that tutors' open relational and implication questions produce no response at all in 22% and 57% of cases and where response is forthcoming it attempts to close discussion (60% and 36% respectively). If open questions do not function in the anticipated way to open enquiry, we must investigate what other questioning strategies tutors use to do so. This requires re-evaluating the role closed questions play in the tutorial interaction, exploring whether and how closed questions may sometimes provoke learning.

Although closed tutor questions predominantly elicit an immediately closed response from learners (leading 80%; factual 64%), this does not necessarily mean that the interaction is terminated at this point. Rather, how the tutor works with the learner's response may determine whether enquiry will be opened up or truncated. Below we examine how tutors open the process of enquiry by working with the learner's response to construct a narrative or line of academic enquiry.

Despite having an apparently closed structure, **leading** questions may be used effectively as assessment tools to inform the tutor about the learners' knowledge base. Whether these questions open or close enquiry is not entirely a function of the question itself, but of the response it elicits from learners and, importantly, the way in which the tutor works with or uses this response. Example 1 indicates that learners will usually seek to close enquiry by providing the tutor with the one word answer she elicits when using leading questions.

Example 1: Tutors reaction to learners' closed responses opens enquiry

Tutor 1: Height is distributed...(leading question)

Student 15: Normally. (Direct answer)

The dialogue could end there depending on how the tutor proceeds. In the above example, the tutor treats her leading question as a teaching tool, and consequently she continues the discussion, beginning to teach and opening up the enquiry further. Below we can see how the tutor not only opens enquiry by explaining the meaning of the text she is reading from, but she also begins to model appropriate ways in which to answer the question posed in the text.

Example 1: continued

Tutor 1: Height is distributed normally, ok, good [student's name] (tutor repeats

learners' response). ... Ok [reading from the text]... "in 1995 she returns to the same area and measures all of the existing giraffes. She finds that the average height is now 5 metres." (Tutor reads from text) They've grown taller. (Tutor explains what she's read, a teaching device)"Use Darwin's theory of evolution through natural selection to explain the shift in the average height of giraffes." Ok, nowhere does it say anything about geographic isolation, nowhere does it say anything about Lamarck, or Cuvier (Teaching). So what's the first thing you're not going to do, you're not going to write about Lamarck and Cuvier. It asks you specifically about Darwin's theory of natural selection. How would I begin this? (Rhetorical question) Well I would begin this by stating what Darwin's theory of natural selection is. What is Darwin's theory of natural selection? (Rhetorical question) Evolution through natural selection. (Direct response) What does Darwin say? (Factual question)

From this above example, we can see that even leading questions can be used as a platform from which to open the process of enquiry. Further, although rhetorical questions (TQ 1B) do not elicit a response from learners, apparently closing discussion, they need not necessarily do so. Example 2 illustrates how tutors use rhetorical questions as a teaching device.

Example 2: The tutor generates a verbal text, using rhetorical questions.

The group is discussing Darwin's theory of natural selection. The tutor is attempting to demonstrate what makes one theory better than another, by illustrating the need for evidence to support one's theory.

Tutor 1: ...So you're on the right track but what evidence, now just think about it, think that you're in a court of law, what constitutes evidence? (Rhetorical question) Hearsay? (Rhetorical) Thoughts? (Rhetorical) No! (Direct response). We need empirical evidence. And what did Darwin do? (Rhetorical) He went in the Beagle and he observed, yes, and he observed finches, he also observed tortoises (Direct response). He observed these different things on the Galapagos islands. This provided evidence for his theory ok. Whenever you discuss a theory make clear the core concepts (teaching). What are the core concepts? (Rhetorical) The main ideas in the theory. (Direct response) For example, if you are going to give me an answer on natural selection and you say 'natural selection ...Darwin...blah..blah.. and give me a nice thing on the finches but you don't mention variation competition and inheritance you're going to do very badly ok (Teaching). So whenever you're called upon to give a description of a theory make sure that you just say, very simply, what are the main concepts.

Example 2 illustrates that tutors use rhetorical questions as a teaching device, serving a 'scaffolding' function, with the tutor asking and answering questions. The tutor thus models an appropriate critical engagement with the text. Further, in example 2, towards the end of the paragraph (underlined), the tutor begins to elaborate the specific 'moves' required to successfully answer a test question. In this way, the implicit demands of the test question are explicitly unravelled for the learners. Note how the tutor asks a rhetorical question which she then answers, leading learners along a line of argument and constructing a narrative. Thus, the tutor is essentially generating a new (verbal) text.

Even factual questions that elicit closed responses from learners can open enquiry depending on how the tutor proceeds with them. When used in recitation style interaction factual questions are valuable sources of opening discussion, as well as keeping learners' attention focused on the topic. By highlighting the important information required, these kinds of questions also guide learners' reading, serving to 'underline' important facts that need to be understood by learners. Example 3 illustrates recitation that invites interactive communication between learner and tutor.

Example 3: In recitation, the tutor and learners construct a narrative

Tutor 3 and her group are discussing the five-factor model.

Tutor 3: ... I mean it's called the five-factor model. Why is it called the five-factor model?

(Factual question)

*Student 2: There're acquired traits that...***(direct response)**

Tutor 3: There are five traits of personality **(interrupts learners' response)**. *And what are these traits?* **(Factual question)**

*Student 2: Openness to experience, extroversion-introversion...***(Direct response)**

Tutor 3: Okay, when you are thinking of them think of the acronym OCEAN (teaching response). So you can do it in that order so that you don't leave any out.

Student 2: Its openness to new experiences, conscientiousness, (Direct response)

Tutor 3: Okay what's the E? (Factual question)

Student 2: The E is extroversion/introversion. (Direct response)

Tutor 3: Okay the A? (Factual question)

Student 1: Agreeableness (Direct response)

Tutor 3: N? (Factual question)

Student 2: N is neuroticism. (Direct response)

Tutor 3: Okay, and what does it mean to say that something, I mean that it is a trait model? (Factual question) Okay what is a trait? Okay if we are to think of the differences between types and traits? (Factual question)

Student 2: The difference is that types are a division or category (Direct response)

Tutor 3: Okay. So a type is a category (repetition)

Student 2: Where as a trait is a....

Student 1: Discrete category (Direct response)

Tutor 3: A discrete category, very good. (repetition) Whereas a trait is a...(leading question)

Student 2: Is a dimension. (Direct response)

Tutor 3: A continuous dimension.... (repetition)

Student 2: Continuous dimension (repetition)

Student 1: Continuous dimension

[All three say continuous dimension in unison]

Tutor 3: Very good (reinforcement)

This example illustrates the interactive construction of discourse that proceeds from a given question and indicates that tutors' use of closed questions can in fact sustain enquiry and develop understanding of an open structure.

In summary, the data indicate that although tutors' make use of open questions, learners do not respond appropriately to these questions. That is, learners either do not respond at all or they respond with closed answers. This finding suggested that tutors might use other types of questions to open enquiry. Further analysis of tutors' closed questions indicated that tutors' sometimes use these questions to open a narrative line of enquiry. Tutors' use of metacognitive and group cohesion questions further indicated how tutors' impose structure on the developing narrative, guiding the direction of the unfolding discussion.

6.5. Learners' Questions

Although tutors asked more questions than learners and their questioning therefore tended to initiate and structure the tutorial interaction, learners did present questions of their own. The focus now shifts to an analysis of the kinds of questions asked by learners and the response generated from tutors. Table 5⁵ presents the frequency of different kinds of questions asked by learners.

⁵ Tables 13 and 14 in Appendix B present the data separately for each tutor, demonstrating similarities in learners' questioning styles across tutors.

Table 5: Learners' questions

LEARNER QUESTION TYPES (LQ)	FREQUENCIES OF QUESTIONS (%)	Actual Number n=
Closed		
L.Q.1A Linguistic clarification	4%	20
L.Q.1B Factual/content	62%	275
L.Q.1C Administrative	14%	61
Open		
L.Q.2 Borrowed	20%	91
TOTAL	100%	447

Table 5 highlights learners' reliance on asking essentially closed, factual (62%) questions. As most learners have just matriculated, their only engagement with questioning has been in the context of the school classroom. Earlier (see chapter 3) we noted how the classroom context does not facilitate open questioning techniques, but tends rather to promote closed questioning techniques. In particular, the nature of school assessment relies heavily on learners being able to close (by giving a correct answer) rather than open enquiry. Example 1 illustrates learners' use of closed factual questions.

Example 1: Learners' ask closed factual questions

Student 10: So this natural selection, this was Darwin's theory? (Factual question)

Tutor 1: Ooh! Yes! (Direct answer)

Student 10: But it's not a right theory?

Tutor 1: [name]! What do you mean? Yes it's right. It has limitations, but...

Given that the majority of learners attending tutorials are L2 speakers, it is interesting to note that only 4% of questions asked by learners were linguistic clarification questions. This may, in part, be due to the fact that the psychology course has been specifically designed for a mixed mode of instruction with attention paid to the

development of linguistically clear materials. Therefore, unfamiliar English words will be either explained in margin text boxes or learners will be specifically referred to the Conceptual Dictionary (1996) (a comprehensive dictionary, specifically elucidating key Human Science concepts). So, for example, when the word 'geology' appears in the Evolution module it is explained in the margin text as "the study of the earth's crust, its rock strata and the relationships between them" (1997:4). The minimal use of the tutorials for assistance with language related queries does seem to indicate that students are coping with the language demands of the course and that their academic difficulties go beyond this.

Administrative questions also elicit a closed response from tutors. Example 3 illustrates the kind of interaction initiated by an administrative question.

Example 3: Administrative questions elicit closed responses from tutors.

Student 13: This test on Monday, it's just a ten mark test? (Administrative question)

Tutor 1: Yes, it's an open question. (Direct response)

Student 13: Essay? (Learner responds to a question with a question)

Tutor 1: Ja, essay type. (Direct response)

Student 13: So an essay (repetition LR 1B).

Although relying predominantly on closed questioning strategies, a relatively high proportion of learners' questions (20%) are open in nature. This may initially seem to suggest that learners are operating in a similar questioning framework to tutors as the proportion of open questions used by tutors is even lower (12%) than this. However, it is important to note that these open questions are, in all instances, not formulated by students themselves, but 'borrowed' from academic tasks, tests or examinations.

Example 2 illustrates the 'borrowed' nature of learners' open questions.

Example 2: Learners' open questions are 'borrowed' from other sources

Student 1: Yes. Explain how homologies, it's 5b number 1, explain how homologies support evolution. (Open question)

Tutor 1: Ok first question to the class is: what is a homology? (Reformulation, turns question to group)

Student 2: Its similar structures show same evolutionary origin. (Direct closed response)

Tutor 1: Ok [student 3's name]? (turns question back to group)

Student 3: They definitely have a same origin. (direct response)

Tutor 1: Ok, excellent, ok. (Reinforcement) Homologies, and there's some pictures of homologies-and [name] you are right that we share an ancestor, but let's just find them so we can look at them (turns to diagrams in text) this is homologies, on page 19. And homologies basically are showing you the similarities in structures ok. (Teaching) That for instance man dog whale and bird have similar, what can you call these- I'm gonna call them hands but in dogs they're paws and in whales they're flippers. But see how similar they are, see if you count 1,2,3,4,5, fingers, we have 5 fingers, look at the dog's paw, 1, 2, 3, 4,5 look at the whale. All pretty similar ok.... But the whale has adapted to swimming in the ocean. We are not adapted to swimming in the ocean. Now homologies show that we all derive from the same ancestor, what is this called in one word? (Leading question) In one word what is it, what do we call it if we all come from the same, derive from one origin, what is that called? (Tutor repeats her question)

Student 4: Monophyletic! (direct response)

Student 1: Sorry, what is a whale? (factual question)

Tutor 1: Ok, a whale is a very very big, ok, do you know what a dolphin is?

Student 1: Ja. (direct response)

Tutor 1: Imagine 3 times that size, similar kinds of creature, also a mammal, also gives birth to live young, but it's huge. (teaching response) Let's see if I can draw you one [goes to the blackboard]...

In example 2, student 1's initial 'open' question is borrowed from the tasks in the Resource Package. For Dillon (1986) questions enable the tutor to "perceive the world that the student envisages as possible to be known and that he anticipates coming to know in some part" (341). Although they apparently conform to the academic open style of questioning these kinds of inauthentic questions show us nothing regarding the learners' knowledge base. However, although intended by learners to close enquiry by obtaining a correct answer for reproduction in an exam, these questions may be used by a tutor to open enquiry.

In example 2 above, instead of directly answering the student, the tutor turns the question to the group. Note that student 2 provides a direct answer to the tutor's question, attempting to close enquiry. The tutor however, does not immediately respond but turns the question to the group again. Again, a direct closed answer is produced (Student 3). The tutor affirms the students' responses, but still does not close or complete the enquiry. Rather she uses the exchange as the basis for teaching, directing learners to specific pages in the text that she then begins to discuss. Hence, the tutor is not only opening the dialogue; she is opening up the text, directly guiding learners' engagement with it and modelling how an academic question functions in relation to the textual world.

6.6. Tutors' Responses

Table 6 indicates the responses from tutors elicited by different kinds of learners' questions in order to evaluate whether particular kinds of questions limit or facilitate the learning-teaching process.

Table 6: Tutor responses to learner questions⁶

LEARNER QUESTIONS		TUTOR RESPONSES						
		Open	Closed		Group Cohesion		Metacognitive Instruction	
		TR 1A %	TR 2A %	TR 2B %	TR 3A %	TR 3B %	TR 4A %	TR 4B %
Closed	LQ 1A Linguistic	30	50	5	10	3	0	2
	LQ 1B Factual	72	13	4	4	2	2	3
	LQ 1C Administrative	0	95	4	0	0	0	1
Open	LQ 2 Borrowed	51	23	3	8	5	0	10

Table 6 illustrates that linguistic clarification questions (LQ 1A) and administrative questions (LQ 1C) tend, in the first instance, to elicit direct answers (TR 2A) from tutors. LQ 1C, which is a purely administrative type of question, does not provoke teaching, but rather provokes a direct answer (TR 2A: f=95%). This result is expected due to the very specific nature of these kinds of questions. Most administrative questions are about when or where an exam will be written. Hence, they essentially have only one response, a closed direct answer from the tutor. Similarly, questions of linguistic clarification often also require a simple definitional response from the tutor. Example 1 presents an interaction initiated by a learner's linguistic clarification question.

Example 1: Linguistic clarification questions elicit closed responses from tutors

Student 1: What does elicit mean? (linguistic clarification)

Tutor 3: Um? If you elicit something you call something towards, you evoke elicit means the same thing. (Direct answer) Um, ja. I am not sure how else to explain it.

Does that, do you understand that? (Soliciting a group response)

Student 2: Doesn't evoke mean, mean in English to call? (Learner responds to a question with a question)

Tutor 3: Call? (Repetition) No. (direct response)

Student 2: Oh, I have mistaken it with invoke? (linguistic clarification)

Tutor 3: Yes that's invoke (direct response). It's almost to cause. If you evoke you cause things to, things to; you cause reactions (teaching).

Student 2: Whereas if its invoke it means to call? (linguistic clarification)

Tutor 3: Yes, this is evoke or elicit (direct response)

Student 2: It makes a lot of sense now.

Linguistic clarification questions elicit a direct, closed response from the tutor. These questions are important in that they highlight learners' unfamiliarity with certain English words and suggest that, in some instances at least, learners' ability to effectively engage with text depends on their familiarity with linguistic terms. The learner in example 1 explicitly states that the topic 'makes a lot of sense' once they have clarified the meaning of a word.

However, although directly answering a question can close enquiry, it must be noted that TR 2A is frequently immediately followed by TR 1A (an open teaching response).

Example 2 illustrates how a tutor provides an open response to a linguistic clarification question.

Example 2: A closed linguistic clarification question elicits an open tutor response

⁶ The actual numbers of different kinds of responses are available in Appendix B.

Student 6: I just want to ask a question about evolution, about gene frequency, um, it came out on our test? (Linguistic clarification)

Tutor 1: ... It is a definition of evolution, ok. One of the definitions is um, slow changes occur over time ok (teaching). The change in the relative gene frequency over time is what evolution is about ok. (teaching) Darwin himself did not define evolution that way, ok (teaching). ... Ok, but it is important to know that evolution refers to, over time the, how often that gene occurs in a population is going to change, ok (teaching). So if we take um, the giraffes for example, over time, tallness, long necks, ok, that gene, that coded for longer necks would become more prevalent, ok (use of examples). That's how come the distribution shifts ok. (teaching)

Student 6: So that's the thing about frequency, how often?

Tutor 1: Yes, frequency is how often. Ja.

Example 2 shows how a tutor can use a 'closed' learner question to open up discussion. The learner's question could have been answered with a simple definition, closing further enquiry. However, the tutor offers more than an answer, she begins to explain what is meant by 'gene frequency'. The learner's response indicates that the explanation was helpful in explaining the meaning of the term 'frequency'. Note, the learner did not initially ask what 'gene frequency' meant; the tutor's response elicits this further question. Clearly, how a tutor responds to a question largely determines whether further questions will be asked and whether discussion will be opened up or not.

Quantitative analysis indicates that learners' most frequently ask factual questions that require only a single answer. Consequently, these questions elicit a direct answer from the tutor. These questions are aimed at closing enquiry by fixing 'knowledge' in an

established unquestionable 'fact'. They may be viewed as products hinting at the underlying epistemic assumptions informing learners' epistemic cognition.

Closed questions of the factual kind (LQ 1B) predominantly (72%) generate an open teaching response (TR 1A) from tutors and even questions asking for linguistic clarification elicit this kind of open response 30% of the time. As learners predominantly ask factual questions (LQ 1B $f = 62\%$) which seek to close, rather than open enquiry, it is interesting to note that tutors' responses to these questions frequently open, rather than close enquiry. Example 3 illustrates how tutors respond to closed learner questions with open responses

Example 3: Tutor responds to a closed question by opening enquiry

Student 11: Uh, but when they say illustrate, what do they mean by illustrate? (Factual question)

Tutor 1: Illustrate, illustrate isn't obviously draw, but illustrate is, is um, to use examples, ok. (teaching response) So if I was to illustrate that I knew what I was talking about I would use the example of the finches (teaching). I would say their beaks changed, all these sorts of things. That would be a diagram so to speak, in words to illustrate that I knew what I was talking about. Ok? (Monitoring question)

Student 11: So if the question is to illustrate what you know about the theory you must uh, talk about the, uh, evidence as well as the concepts? (Learner responds with a question).

In example 3 the tutor responds to a learner's closed question by explaining both what the term 'illustrate' means as well as showing the learner how to answer questions containing this kind of instruction. The tutor's monitoring question elicits a further

question from the learner, again giving the tutor an opportunity to open enquiry and begin teaching. Example 4 further illustrates learners' desire to obtain a final, correct answer to her question.

Student 10: They came different? (Factual question)

Tutor 1: No, no they were just born different (direct answer). They were born different.

You are different to me in height (use of example to illustrate point).

Student 10: Oh, ok, ok, let me make, just 2, 2 things is blown to the island. Born different. What will happen? (factual question)

Tutor 1: Obviously that didn't happen, that's a different thing ok. If that would happen, the species would die out. (direct response)

Student 10: Ok, ok, they, they change because they, they're in a different island? (factual question)

Tutor 1: No! They are automatically different (direct response). They were born on South America; they were born on South America and there were differences between individuals of that species (teaching). There is variation in any species. Does that help you or not? (Feedback question)

Example 4 shows how a learner struggles to get a final, closed answer, reflecting her epistemic assumptions that there is such an answer 'out there'. The discussion involves the fact that variation within species is a random occurrence, rather than something chosen by the individual. The student keeps trying to get the tutor to agree that variation is caused by something concrete in the environment. The tutor however, gives no concrete reason for variation ("they were just born different", line 2) making it very difficult for the learner to concretise variation.

LQ 2, an ostensibly open question, elicits an open response from tutors 51% of the time although the learner may not fully grasp the open structure of the question and may in fact be seeking a closed response or direct answer from the tutor.

Example 5: Learner's open question elicits an open response from the tutor

Student 2: Can you please explain for me that theory for Lamarck. (Open question)

Tutor 1: Ok, ok so it's Lamarck's theory (repetition). And Lamarck is talking about evolution through the inheritance of acquired characteristics (teaching). Who wants to tell me what acquired characteristics are first of all? (Reformulation, turns question back to group)

As discussed above, learners' open questions are borrowed from academic tasks thus mimicking the open structure of academic enquiry but are posed in order to elicit a 'right' answer from tutors. However, again tutors may use these questions to create open enquiry. Example 5 above illustrates how the tutor begins to 'open' enquiry by opening the question to the group to answer, rather than closing discussion by giving a direct answer to the learners' question. Learners' open questions are often so sweeping (indicating an inability to exercise control over the tasks demands or the learners' problem solving activity in relation to the task), that the tutor has to set boundaries to the question. Hence, tutors' may rely on metacognitive instruction (TR 4B f=10%) when answering these questions, modelling an appropriate way of engaging with this kind of question and showing students how to select information for discussion from the text.

In summary, it appears that the opening or closing of enquiry does not depend solely on the questions asked by learners, but rather on how the tutor responds to those questions. Consequently, although learners predominantly ask closed questions, tutors

respond to these questions by opening enquiry and modelling appropriate forms of engagement.

6.7. Sustaining enquiry: The relationship between learners' questions and tutors' responses.

In chapter 5, figure 2 represented the kind of interaction initiated by a learner's question. A learner asks a question essentially to obtain a fixed 'right' answer. That is, learners' questions seek to close enquiry in a final answer. However, tutors frequently open discussion by responding to learners' questions with open, rather than closed responses. Below we examine how tutors "sustain the asking" (Dillon, 1988: 26).

In contrast with learners who close even open tutor questions, tutors predominantly produce open responses to learners' questions. These kinds of responses are primarily teaching responses, as in example 1 below where the tutor explains the meaning of a particular diagram.

Example 1: Tutors' open responses are teaching responses, providing instruction in the learners' Zone of Proximal Development.

Student 14: And if I'm asked to, say I'm asked to explain it [the diagram]? (Factual question)

Tutor 1: I would explain it by saying that this, this diagram explains the nature of psychological reality (direct tutor response). It is saying what psychology studies. Psychology studies material and non-material reality, but a particular kind of non-material reality, thoughts, mental processes (teaching response). Things we can study using scientific methods. Things we can know using scientific methods (repetition). Ok, it knows these things exist because these

things present us with resistance's ok (Teaching) Because how do we even know that there are such things as thoughts? (Rhetorical question) I can't see them floating out of your head. How do I know that they're there? (Repeats question) How do I know that there is such a thing as fear? (Rhetorical question) I know it because I have felt it, I have felt it (direct response). It's made me, it's presented resistance's to my behaviour, ok. I am very resistant to spending any time with spiders, ok (uses examples to relate unfamiliar to familiar). I really, really don't like spiders, ok . So if there's a spider in my room, it stops me from entering the room, as surely as if there was a door stopping me, ok (Teaching). My fear prevents me, resists my actions, resists my going into the room (Reformulation). Why do I have a resistance to that? (rhetorical question) Because I'm afraid. (direct response) Fear ok (reformulation). I would also then say this [pointing to shaded part of diagram (refers to text) is what psychology studies using scientific methods... ok, so what does psychology study using scientific methods? (Asks a factual question)

The long response illustrated in example 1 highlights some of the teaching strategies used by tutors:

1) Teaching (TR 1A) by elaborating on theories and concepts; 2) the use of examples (TR 1B) relating an unfamiliar concept (that non-material reality can present resistance) to a concrete example of the tutor's own fear of spiders, 3) referring to the text and offering explanations of textual material, such as the diagram discussed above (TR 1C).

Tutors also may respond to learners' open questions by modelling a correct response (TR 4A) or reformulating the question (TQ 3A) and turning the learner's question back to

the group (TR 4B). That is, tutors' model in dialogue how learners should be engaging with open questions. Example 2 illustrates this modelling process:

Example 2: Metacognitive instruction: In dialogue, tutor mediates learners' access to academic enquiry.

Student 16: Because in my understanding I, I understood everything. And shew, after I wrote the test...[shakes her head]. [Tutor 1: reads test-silence while reading].

Tutor 1: Ok, you didn't need to say this stuff about Cuvier ok? (Going over the learners task, modelling correct response) Um, and you know where you've lost marks here, I can tell you exactly. You haven't named all the core concepts, if you had put all the core concepts down here. That's where you lost your marks. You do demonstrate that you understand what's happening, ok, I see that you understand what's happening ok, but without using the theoretical language you won't get your marks.

Student 16: Ok, like how?

Tutor 1: Variation, competition (direct response). Cos here you said 'food sources decreased'. (modelling). You could have got a whole mark for that if you said 'this Darwin called competition' (teaching). Ok, it's a little thing, but when you are talking about theory you must use the correct concepts ok. (modelling)

Student 16: Ok, you said that, um, when we like, when we mention competition, variation you have to explain like that (learner repeats tutor's explanation). I like you should explain what variation is. Then explain how it is, I mean how the birds got their average beaks and things.

Tutor 1: Yes, that's exactly what you must do Nomthandazo (Direct response). You must say something like 'Amongst the finch population there was variation in their beak 'hardness' (teaching). What I mean by this is that there were finches who had differences in their beaks (teaching). Because resources were scarce

ok, because there was a drought [test question refers to drought] Darwin referred to this as competition, ok, where those birds that have the variation, hard beak, random variation, those that had that could feed. They passed this on, because they could feed and survive they passed this on to their offspring. Ok. So this here is just irrelevant, [points to test paper] you just don't need to say that [Lamarck/Darwin/Cuvier comparison] (modelling). You're wasting your time, you must put in what is necessary in terms of the question (modelling). And you would have got a better mark if you had just used and defined the concepts ok. So always define and use the concepts, ok. And if possible use the example given . Use the example given here and then you will do well .

Student 16: And can I, I what if I, I had used the geographic isolation? (factual question)

Tutor 1: You wouldn't get marks for it. (direct response)

Student 16: For that? (Learner responds with a question)

Tutor 1: Not for this question (repetition). Because see here, what this question says, they're all on one island (teaching). So where's the geographic isolation? (Rhetorical question) They're all together (direct answer). Did a river suddenly appear between the one bird and the other bird? (factual question)

Student 16: I, I ...no. (direct response)

Tutor 1: No, they're all on one island so there's no geographic isolation.

Student 16: Ok, if I could have mentioned that if, if maybe they were asking me about, about the birds on different islands? (factual question)

Tutor 1: Then you could mention geographic isolation (direct response). Ok but read the question very carefully (modelling). It says 'on a particular island' (refers to text).

Ok, and the reason -I'm telling you- why you didn't get more marks is because you didn't use the core concepts...(modelling)

Example 2 illustrates how the tutor elaborates on and unravels the demands implied by the test question that the learner has struggled to address. The learner cannot understand why she has not done well and why certain information she has provided has not been marked. The tutor begins to unravel the demands of the test question, pointing out that the information the learner has provided, while not incorrect, is not relevant to the test question. What this example illustrates is learners' inability to select relevant information or identify the boundaries set by the test question. That is, learners' approach a test question in a 'blurred and sweeping' way (Feuerstein, 1980). The interaction in example 2 reveals scaffolding, in which the tutor reformulates the examination question. This is a particularly useful example as it demonstrates first how examination questions require a specific questioning stance, predicated on a critical textually based epistemology. Second, it illustrates how the tutorial dialogical interaction reformulates the text and the general demands of academic enquiry. The tutor has an opportunity to unravel the demands implied by the test question, highlighting what the student has done incorrectly. Notice that the student believes that she has understood everything, and therefore has no ready explanation for why she has done badly. That is, she cannot identify either what the test demands or what counts as a 'good' answer. Miller (1996) identifies this as one of the crucial barriers to learning faced by underprepared learners. Unable to judge what counts as a good answer, what the situation demands, they really do not understand why they have done badly when they have worked so hard. Hence, metacognitive control over the task as well as her own actions in relation to the task is not evidenced (Strohm-Kitchener, 1983).

Example 2 illustrates many features of underprepared learners' questioning stance: 1) the manifest question is blurred and sweeping, indicating the learner's inability to focus on the task demands. 2) The learner evidences no control over either the task demands or what mental actions are necessary to solve the ill-structured problem posed in the task. Solving ill-structured problems requires that one uses all three levels of cognitive processing outlined by Strohm-Kitchener (1983, see also chapter 3, pages 41-43). Therefore, lack of metacognitive processing hinders learners' engagement with ill-structured problems. The learner is seeking a single, final answer from the tutor who is viewed as an authority. This desire to close enquiry in a final answer points to a reliance on a commonsense epistemology that seeks to close, rather than open enquiry.

Although learners predominantly ask closed questions, they do ask open questions. However, these questions are primarily borrowed from various sources such as tests or examination questions. The fact that these questions are directly borrowed indicates that students know that these are the kinds of questions that they need to engage with, but their concern with producing correct answers suggests that they do not share the questioning epistemology that underpins these questions.

Example 3 illustrates a learner's use of an open question posed in order to elicit teaching and requiring that the tutor's response set limits to the 'limitless' knowledge presented in the text. The question is so 'open' (in the sense that it contains no specific details or focus and therefore has no boundary) that the tutor is forced to contextualise the question, narrowing it by pointing first to the fact that 'Catastrophism' is a theory and contextualising it as one theory in relation to others as this is its significance in the course as a whole.

Example 3: Open learner questions elicit teaching

Student 4: Can you explain for me the details of the Catastrophism? (Open)

Tutor 1: Ok Catastrophism (repetition). ... Now Catastrophism was a theory (teaching).

Now we must make a difference in our thought straight away between evidence for evolution and theories of evolution. There's a difference. Who knows the difference?

(Solicits group response)

The extremely sweeping nature of learners' open question in example 3 suggests that learners ask questions that lack precision indicating a failure to appreciate the limits or parameters that an academic questions proposes. These open questions are 'blurred and sweeping' (Feuerstein, 1980) in nature, demonstrating learners' inability to judge the relevance of some facts relative to others and ineffective metacognitive control over both the demands of the task or their own mental actions in solving the task. In example 4 below, the learner's question indicates that she is unable to engage with the open question in the task.

Example 4: Tutors' responses to learners' open questions can mediate learners' access to text.

Student 18: This question that came up they said why a human being is having the backache. I don't understand in the feedback the answer, sheesh. (Open question)

Tutor 1: What question is that?

Student 18: Maybe like that they don't have a natural, like before peoples was walking on their hands, like. (Direct response)

Tutor 1: [Gets up] get this, I'm standing on (leading question)

Group: 2 Legs. (Group response)

Tutor 1: 2 Legs ok (repetition). Now there's a lot of stuff I'm carrying because I'm standing on 2 legs (teaching). Look at these poor little feet. My feet are size 5 they have to carry this whole frame ok. On these 2 legs. Everything is on these 2 legs. My spine is carrying all of this weight. Now imagine if I was like this, like

an animal [gets on hands and knees] the weight is hanging down. Can you see that? (Rhetorical question) Hanging down. (Direct response)

The question the learner asks in example 4 is characteristic of most 'open' learner questions. It exhibits blurred and sweeping features, evidencing an inability to select the relevant information necessary for answering the question posed in the text. It is a 'borrowed' assessment question from the module tasks requiring that the learner is able to select the relevant information from the text in order to answer it. The question asked by the learner is so 'limitless' that the tutor has to set boundaries to it. By setting boundaries to the possible answers to this question, the tutor is already beginning to model for learners how to approach text, how to select what is relevant and disregard irrelevant information.

6.8. Concluding Comments

In conclusion, findings indicated that learners' and tutors' initially appear to ask the same types of questions, with both predominantly asking questions regarding course content and using primarily closed questions. However, further analysis of the data indicated that tutors and learners use these kinds of questions in very different ways. Learners used borrowed open questions in order to elicit factual information from tutors. The borrowed nature of these questions indicated that learners identify the kinds of academic questions they must engage with, yet are unable to successfully engage with these questions without assistance. Consequently, although learners' questions were intended to drive the tutorial interaction, this did not in fact happen. Tutors, on the other hand, ask open questions in order to provoke enquiry, evidencing appropriate engagement with these kinds of questions. However, qualitative analysis indicated that tutors use of open questions often did not facilitate enquiry. Rather, tutors' open

questions elicited predominantly closed responses from learners. Therefore, as tutor's use of open questions did not initiate enquiry, analysis focused on what questioning strategies tutors used to do so. Tutors use of metacognitive and group cohesion questions indicated that tutors use these kinds of questions both to engage learners' attention, inviting their participation in the tutorial interaction, as well as to guide and structure the tutorial process. The complete absence of these kinds of questions in learners' questioning strategies highlights both learners' need for this type of assistance, as well as highlighting the fact that learners' questions do not control the tutorial interactions. Further, analysis of tutors' closed questions indicated that tutors sometimes use closed questions in order to open discussion and cultivate learning. Analysis of tutors' response strategies indicated that tutors' predominantly produce open responses to even closed learner questions. Consequently, tutors initiated and sustained learning with the use of closed questions and open response strategies.

7. DISCUSSION

7.1. Introduction:

In chapter 6 trends in the data pointed to certain interpretations that will be elaborated in this chapter. Ong's (1982) conceptualisation of the different cognitive demands required by orality and literacy and Craig's (1991) identification of a commonsense epistemology underlying underprepared learners' approach to tasks provide the theoretical framework for the discussion regarding learners' questioning strategies. Learners' questioning styles are compared with tutors' questioning techniques in terms of the demands of textuality elaborated by Ricoeur (1981, 1980) and the epistemic cognition required to solve ill-structured problems elaborated by Strohm-Kitchener (1983).

7.2. The Questions of learners and tutors

Tutorial help-sessions provided the learning-teaching context for investigating learners' and tutors' questioning strategies. Although the tutorial is essentially a dialogical interaction, it is structured in relation to the demands of the written module text. Learners are required to read the written text and generate questions to ask tutors. Learners' questions provide moments for mediation, pointing to what is known and to what needs to be known in order to engage effectively with the text or task. Questions not only indicate what needs to be taught/learnt in terms of particular content, but also provide a window into the cognitive processing of the learner, revealing a way of questioning. For example the use of closed questions may indicate an epistemic assumption that seeks to ground enquiry in an authoritative or final 'truth'. Figure 3 illustrates the process of learners' questioning. Text (whether verbal or written) provides the impetus for the learner's question, by provoking 'perplexity' in the learner (Dillon, 1988). Faced with unfamiliar knowledge, the learner seeks to move from a state of perplexity to one of knowing, by asking a question. The

learner's question displays the learner's relation to the knowledge within the text, indicating what the tutor needs to teach the learner to facilitate understanding. Further, the learner's question may also indicate that s/he does not know what to ask or how to frame a critical question, pointing to different teaching needs. Neither the tutor nor the learners may fully appreciate or consciously recognise the different frameworks mobilised by the other, but in the construction of their own questions and in their responses to learners' questions, tutors may nonetheless model and mediate appropriate engagement.

Figure 3

TEXT → **LEARNER'S QUESTION** → MEDIATIONAL OPPORTUNITIES

By contrast, tutors tend to construct different kinds of questions and to use a variety of strategies aimed at sustaining the enquiry process. Results reported in chapter 6 indicate that tutors and learners both use predominantly closed questioning strategies during tutorial interactions ($f=80\%$ and 50% respectively). However, whereas learners use particular sorts of closed questions (linguistic, factual and administrative) in order to ascertain a specific answer to something that they may not understand, tutors use a different range of closed questions (factual, rhetorical and leading) and these function in a different way. In the following example the learner asks the tutor to explain the meaning of the word 'elicit'.

Student 1: What does elicit mean?

Tutor 3: Um? If you elicit something you call something towards, you evoke elicit means the same thing.

Whereas learners' are seeking to progress from a state of 'perplexity' (not knowing) to one of knowing by asking questions, tutors use closed questions to evaluate learners' knowledge base and to investigate any gaps in learners' knowledge that

they subsequently seek to fill (Dillon, 1988). For example, in the following interaction the tutor asks a closed factual question in order to check the learner's knowledge base.

Tutor 3: There are five traits of personality. And what are these traits?

Student 2: Openness to experience, extroversion-introversion...

Tutors' closed questions, then, direct teaching intervention by pointing to gaps in learners' Zone of Proximal Development, indicating mediational opportunities and consolidating and building the learner's knowledge base (Vygotsky, 1978). Tutors' open questions, on the other hand, aim at provoking disequilibrium in learners, shifting them from the familiar to the unfamiliar, providing the impetus for learning. Tutors' open questions model for learners how to approach academic enquiry by demonstrating the kinds of questions one must ask when engaging with text. As with learners' questions, tutors' questions can be treated as windows indicating cognitive processes that underlie tutors' questioning strategies. Figure 4 illustrates the process of tutors questioning.

Figure 4

TUTOR'S QUESTION → LEARNERS RESPONSE → MEDIATIONAL OPPORTUNITY

Analysis of tutors' and learners' questioning strategies in relation to the overall discourse indicated that tutors ask more questions than learners, with tutors dominating talk time.

Further, comparative analysis between tutors' and learners' questioning strategies indicated that tutors asked metacognitive and group cohesion questions, aimed at structuring and driving the tutorial process, while learners did not ask these kinds of questions. Their exclusive use of these process type questions indicates that tutors,

rather than learners, drive the tutorial interaction. While this result may be expected in traditional classroom scenarios, it was not expected in this study as learners were specifically instructed to attend tutorials in order to ask questions. Consequently, tutors' dominance of talk time and control of the tutorial process suggests that learners did not construct many of their own questions, or take control of the learning-teaching agenda. Earlier, the importance of providing a non-threatening space for learners to ask questions was discussed (chapter 4). Dillon (1986) has noted that asking questions requires that one has enough courage to seize talk time. Relatively few learner questions indicate perhaps the very real challenge facing those learners who want to ask questions in an environment controlled by a tutor, who is viewed as an authority figure in the tutorial interaction. Tutors' use of metacognitive and group cohesion questions to control the direction of the tutorial process further reinforces the learners' perception that tutors are 'in charge'. The possibilities for learners and tutors to jointly construct knowledge in this kind of controlled scenario appear limited. The need to value difference and negotiate meaning within the tutorial process may be lost when the tutor enforces the 'right' way of constructing knowledge (Taylor, 1991, see also chapter 2). Further, if the tutor controls the learner's engagement with tasks, there is a real threat that the learner will become dependent on the tutor's assistance and will be unable to successfully engage with tasks without this help. However, although quantitative trends in the data suggest *that tutors dominate and control the tutorial process, these trends do not indicate how* the tutors do this. While asymmetrical power relations will invariably exist in tutorial spaces because learners view the tutor as a teacher and respond accordingly, it can be argued that the particular structure of the tutorial interactions in this study challenges these relations. Learners are actively involved in the tutorial process, with tutors relying quite frequently on metacognitive ($f=17\%$) and group cohesion ($f=21\%$) questions to engage learners in the tutorial process and to structure the process for

learners, rather than as a control mechanism. For example, in the following interaction the tutor's reformulation of the learner's question models a more appropriate questioning stance, guiding rather than controlling the learner's engagement with the task.

Student 4: Is it not communicating the language, the introduction?

Tutor 1: Hmm. Ok, is the introduction communicating the information?

(Reformulation question) *It is but not in this sense...*

Tutors frequent use of metacognitive strategies to model appropriate engagement further indicates that learners elicit this kind of strategy from tutors. It is also evident that learners' difficulties with posing appropriate questions necessitate instructional structure and direction on the part of the tutor. Further, where tutors attempt to provoke open discussion with less focused questioning, learners struggle to respond. The use of metacognitive strategies model (rather than impose) how learners should engage with tasks and aim to empower learners to become autonomous, self-directed learners. Therefore, although tutors may control tutorial spaces, this does not necessarily mean that learners are marginalised.

7.3. The demands of Textuality: Engaging in academic enquiry

Appropriating meaning from text requires that one is able to appreciate text as a process of enquiry, rather than viewing it as a fixed product or answer (Gadamer, 1975). Unlike dialogical interlocution where a question may be closed by an answer, text demands a questioning stance that is capable of sustaining an open enquiry. This is an open process that occurs 'in front of the text' (Ricoeur, 1980) but is constrained by the questions responsible for generating it. The question of the author is the first question framing the text (Ricoeur, 1980). Similarly, in a tutorial the tutor's verbal text represents an answer to which learners must generate the appropriate question. This is the 'hidden' question that learners need to engage with in order to

interpret the text successfully. Further, text provokes questioning in the reader, by pointing to new, unfamiliar worlds (Ricouer, 1980). Therefore, in order to effectively engage with text, one must be capable of asking the kinds of questions that open rather than close enquiry. Two kinds of open question were identified in this research as representative of the demands of textual knowledge construction: implication and relational questions. Implication questions, that seek to open up the logic of a textual argument, rely on deductive reasoning to infer conclusions from premises. Tutors use these questions to illustrate the logic underlying text and to explicitly develop the 'unsaid' of the text. For example, in the following interaction the tutor asks an implication question in an attempt to get learners to question the underlying logical foundation Catastrophism.

Tutor 1: How come if god is getting rid of species and putting new species on the world, how come he makes them so similar?

Relational questions, similarly, open up the meaning of text by unravelling the 'hidden' relations between seemingly unrelated facts. Tutors' use of these kinds of open questions points to particular epistemic assumptions, namely, that knowledge is relative rather than fixed and certain, and that understanding is developed through the structure and relationships established between facts. In example 1 on page 141 the tutor's assumption that knowledge is relative, that a "better theory" (line 29) can replace an established one, is clear. Further the need to critically evaluate knowledge claims is clearly elaborated in the tutor's claim that *"this wasn't the best explanation possible... we must see that you can move to a better theory, better, better all the time. We want to get the best theory possible"* (line 29-30).

Open questions may be likened to Strohm-Kitchener's (1983) notion of ill-structured problems, in that they require the ability to conceptualise the fluidity of knowledge construction, grasping the relationships between various theoretical

discourses as well as appreciating multiple as opposed to single routes to an answer. That is, they require that the questioner is able to evaluate factual information in order to reason across cases. Tutors' use of critical reasoning strategies (such as the construction of 'if...then' arguments) to reason across cases, further illustrates their use of appropriate epistemic cognition predicated on the belief that knowledge is constructed via critical enquiry. In example 1 on page 141-142 the tutor's assertion that "*if we know that the earth is older than that ... **Then** we don't have to say that every couple of hundred years god wiped out a whole species*" illustrates the tutor's use of critical reasoning strategies mobilised in order to deduce a conclusion from premises. Tutors' use of syllogistic arguments highlights their familiarity with the demands of textual reasoning. Ong's (1982) analysis of the cognitive demands of literacy suggests that the use of deductive logic implies a reliance on deeply interiorised literate modes of thinking (see chapter 3, pages 63-64). Consequently, tutors' use of critical reasoning suggests that tutors have deeply interiorised literacy. Finally, a further indicator of tutors' epistemic assumptions is the fact that tutors' spoken discourse contains features of written discourse (such as particular mechanisms of integration for example, the use of relative clauses, past tense and formalised language) identified by Tannen (1982). The following example illustrates a tutor's use of formalised language as well as a relative clause in her spoken discourse. "*...the antediluvian theory which was the flood theory*". Tutors' use of integration in their spoken discourse suggests that tutors have deeply interiorised writing and that this textual frame informs the apparent dialogic exchange of the tutorial.

7.4. Ostensible versus real openness

in order to engage appropriately with text, one must ask questions that open, rather than close enquiry. In the previous section tutors' appropriate use of open questions

to facilitate enquiry indicated that they are familiar with the demands of textuality. The extent to which tutors' open questions provoke learning is investigated below.

7.4.1. Tutors' Open questions

Despite the emphasis on open-ended enquiry suggested by the analysis of textual demands, quantitative trends identified in the data indicate that tutors' rely heavily on asking closed, rather than open questions ($n=679$ 50% of all questions and $n=165$ 12% of all questions respectively). It was expected that tutors would use open questions in order to shift learners' understandings, provoking cognitive conflict. As open questions are useful teaching-learning tools, the dearth of open questions asked by tutors was initially viewed as problematic. However, possible reasons for the relatively few open questions asked by tutors are suggested by the responses these questions elicit in learners. The data indicate that learners either do not respond to tutors' open (relational and implication) questions (22% and 57% respectively) or produce closed responses (60% and 36%). When a tutor asks an open question she anticipates that the question will open enquiry. In the following example the tutor asks an implication question aimed at provoking discussion and receives no response from learners.

Tutor: Each time there was a catastrophe shew wiped out the species. Bye bye species. What's wrong with that? (Implication question) Just think about it logically... There's a great catastrophe, all of the species are wiped out. What's wrong with that? [5 minutes: LONG PAUSE]

This example illustrates how learners' silence threatens to break communication, ending enquiry rather than opening it. Learners' failure to respond to these kinds of questions indicates that they are unable to appreciate the questioning stance responsible for generating these open questions and the nature of the parameters for answering. Further, these kinds of questions are representative of the assessment questions learners must engage with in examinations. Learners' inability to respond

to a tutor's use of these questions indicates that they will struggle to engage with them during examinations. Learners' failure to respond to these questions suggests a reliance on different epistemic assumptions or different modes of enquiry. When learners do respond to tutors' open questions, they produce closed responses as in the following example.

Tutor: ... How come if god is getting rid of species and putting new species on the world, how come he makes them so similar?...

Student 6: That mean god can. That my idea.

In this example the tutor uses an implication question to get learners to critically question Catastrophism's problematic claims, by unpacking the underlying logic of the situation. The learner however, does not engage with the question in an open manner but rather closes enquiry in a final, unquestionable 'truth'; the will of god.

Therefore while tutors' opening strategies clearly evidence a reliance on a particular kind of epistemic cognition, learners' desire to close enquiry evidences a reliance on a commonsense epistemology, that seeks to close, rather than open discussion. In fact, where tutors do ask open questions, such as the implication question in the example above, learners do not evidence an understanding of what the tutor is attempting to do. Where understanding is not present, or where misunderstandings exist, discussion cannot even begin. Many learners simply do not evidence the level of understanding required to engage in discussion. The following interaction illustrates that learners may not share a level of understanding with the tutor.

Tutor 1: ... But the whale has adapted to swimming in the ocean. We are not adapted to swimming in the ocean. Now homologies show that we all derive from the same ancestor...

Student 1: Sorry, what is a whale?

Tutor 1: Ok, a whale is a very very big, ok, do you know what a dolphin is?

Student 1: Ja.

Tutor 1: Imagine 3 times that size, similar kinds of creature, also a mammal, also gives birth to live young, but it's huge. Let's see if I can draw you one [goes to the blackboard]...

In this example the tutor is trying to get learners to understand the logical connection between life forms suggested by homologies. Student 1 cannot engage with the tutor's discussion as she does not know what a whale is. This calls for some innovative teaching strategies, such as pictures to illustrate the argument in the text, rather than posing open questions. The hermeneutic circle is broken in the absence of shared meaning. Consequently, where learners do not evidence a shared level of meaning with the tutor, the tutor's open questions may in fact end, rather than open enquiry. Further, Dillon (1988) points out that for discussion to be effective, the tutor must pose questions that are 'in question' for her. That is, she must ask questions that have more than one answer, allowing the discussion to progress towards a negotiated answer. Given most learners' reliance on a commonsense epistemology, that seeks to ground knowledge in absolute certainty, if the tutor, perceived by learners as possessing access to 'certain' knowledge, poses these types of questions, learners may well find this threatening. The threat inheres in the learners' realisation that the tutor does not 'possess' certain knowledge; how then can she effectively help them to attain this knowledge? Of course, this is precisely the kind of engagement learners should be developing, in order to hone their critical skills. However, for many learners, who lack even the basic levels of shared understanding required to engage in discussion and/or independent reading, discovering that the tutor is herself 'perplexed' may not prove useful.

Although results indicated that tutors' open questions did not provoke enquiry this does not necessarily mean that these questions served no learning purpose. The following example illustrates how the tutor develops a line of argument, modelling how to approach academic enquiry by asking open questions during a dialogical interaction, demonstrating what kinds of questions one can ask of text.

Tutor 1... fossils provide evidence in other words, we know that evolution has happened but we need evidence to support us. I mean, imagine if you're, if you're guilty of a crime and you go to court. Does the judge just say- oh well I don't like your face that's fine you're going to jail? (Open Implication question).

It is in this sense, where the tutor models an appropriate questioning stance that dialogue can mediate learners' access to textuality, providing metacognitive instruction. The relatively high percentage of metacognitive instruction recorded in the data (17%) indicates learners' need for tutorial assistance, especially in relation to unravelling the demands of test/examination questions. The following example highlights how tutors can model textual/task engagement. In this example the tutor is going over the learner's test with her, explaining why she has done badly.

Student 16: Because in my understanding I, I understood everything. And shew after I wrote the test...[shakes her head]. [Tutor 1: reads test-silence while reading].

Tutor 1: Ok, you didn't need to say this stuff about Cuvier ok? Um, and you know where you've lost marks here. I can tell you exactly. You haven't named all the core concepts, if you had put all the core concepts down here. That's where you lost your marks. You do demonstrate that you understand what's happening, ok, I see that you understand what's happening ok, but without using the theoretical language you won't get your marks.

Student 16: Ok, like how?

Tutor 1: Variation, competition ... Cos here you said 'food sources...

So, results from this study indicated that tutors' use of open questions did not necessarily open enquiry, as learners were unable to respond appropriately. Therefore, in order to pose open questions, the tutor must ensure that learners are sufficiently knowledgeable regarding the content under discussion. Some learners are so underprepared and unfamiliar with critical reading and questioning strategies that posing open questions, without scaffolding the learners' entry into the discussion proves futile. Therefore, although tutors ask open questions, learners' failure to engage with them in fact closes rather than opens enquiry. Consequently, tutors make use of other types of questions in order to initiate and sustain enquiry.

7.4.2. Learners' open questions

20% of all learner questions are open questions. However, learners' used open questions in very different ways to tutors. Learners' open questions are borrowed from tasks or previous tests. For example, the following open question is borrowed from a task: *"This question that came up they said why a human being is having the backache?"* Learners ask these questions in order to elicit a factually correct answer from the tutor, which they can then reproduce in an examination. The fact that these open questions are 'borrowed' indicates that learners do not adopt a critical stance towards knowledge construction but rather imitate the kinds of questions typical of academic enquiry. Learners' inappropriate use of open questions exhibited features of 'blurred and sweeping' engagement (Feuerstein, 1980). In other words, these questions indicated that learners could not define the parameters of academic questions. The lack of precision evidenced in learners use of open questions suggests that they would be unable to use an 'unseen' new question in an exam to appropriately frame and circumscribe enquiry as required in this form of assessment. The following open question illustrates the 'sweeping' nature of learners' open

questions: *"Can you explain for me the details of the Catastrophism?"* These kinds of questions characterise underprepared learners' relation to text indicating uncertainty about how to engage with the structure of the text or how to select a focus for enquiry and relevant facts for engagement. As these questions indicate an underprepared approach to textuality, they suggest that these learners received inappropriate or inadequate mediated learning experiences during their development. The segregationist educational policies of South Africa's past have traditionally meant that underprepared learners were drawn from schools where appalling educational facilities provided learners with inappropriate mediated learning experiences. Democratisation in society and consequently, in education, has gone a long way towards addressing these issues (Asmal, 1999). However, overcoming the past unequal distribution of educational resources will take time. Hence, many learners who are undertaking their first year at university are underprepared for university studies.

So, learners' use of open questions indicates that they superficially adopt the kind of questioning stance typical of academia, without evidencing how these questions should be used to provoke enquiry and indicating a lack of familiarity with the demands of textuality. These kinds of questions characterise underprepared learners' questioning strategies, demonstrating both an inability to direct attention to relevant information in the text and to set boundaries on the text. Further, these questions evidence an acceptance that a final 'true' answer is available (from the tutor) and that this 'truth' is incontrovertible. In other words, learners' open questions evidence characteristics of what Craig (1991) has called a commonsense epistemology. The epistemology of text that requires that learners view knowledge as contextually relative and constructed by a process of critical enquiry is in direct opposition to this. However, learners' failure to ask the kinds of questions demanded by textuality does

not mean that they are unable to acquire the ability to ask these kinds of questions. Consequently, the lack of critical questioning evidenced by learners is not a problem that should be located in learners, rather, it is a problem that can be solved in tutorials by tracing the generative processes responsible for the inappropriate questioning performance and mediating more appropriate questioning strategies. It is in this learning-teaching context that tutors' dialogue can mediate learners' access to textuality by modelling appropriate questioning strategies for interrogating text.

7.5. Ostensible versus Real Closure

Trends in the data illustrate both learners' and tutors' reliance on closed questioning strategies (80% and 50% respectively). Moreover, analysis of the discourse as a whole suggests that only a quarter of the entire discourse is occupied by questioning. Tutors' reliance on closed questioning techniques, coupled with the overall lack of questioning evidenced in tutorials was initially thought to be problematic. The important role questions play in learning has been discussed at length. Shepherd (1998) has suggested that one cannot investigate questioning strategies without investigating responses to those questions. He argues that an understanding of how questions can open or close enquiry requires that one analyse questions and the responses they elicit as a unit. Consequently, one can only appreciate how a tutor uses a question to initiate and sustain enquiry by investigating both questions and the responses they elicit. This is the approach taken in this research. If we view questioning strategies in isolation, we can only conclude from the quantitative analysis that tutors and learners rely predominantly on asking closed questions. This result suggests that tutors and learners do not evidence different epistemic assumptions; indeed, this result would suggest that learners and tutors essentially generate understanding and operate on text in much the same way; that is, with the aim of closing enquiry. Qualitative analysis of the data, however, indicated

that tutors and learners ask different kinds of closed questions and use them in very different ways. Whereas learners ask closed questions in order to elicit factual (closed) responses from tutors, tutors ask closed questions to initiate and develop a particular process of questions and answer which Dillon (1988) calls recitation.

Recitation is a process of question and answer whereby the tutor asks factual questions, eliciting factual responses from learners. The turn-taking in recitation goes like this: the tutor asks, the learner answers, the tutor evaluates and asks another question. The tutor, therefore, speaks in a questioning format. The tutor speaks at every turn, asking questions at every turn and students speak in answers. Their conversation is limited to answering questions that the tutor poses and they do not talk amongst themselves. Recitation style questions may be viewed as closed, therefore, in that no discussion is promoted. This apparent closure is highlighted in literature that suggests that interactions based on recitation are often only verbal rote learning tactics. This form of teaching may therefore provoke a particular kind of learning, similar to the rote learning tactics learners were taught at school (Moll & Slonimsky, 1989). It was therefore expected that recitation would not provoke learning, unless it gave way to other, more complex forms of interaction.

Results show that in recitation learners respond to factual (closed) questions with closed answers, suggesting that recitation is not an effective process for opening enquiry and tutors' reliance on posing factual questions was therefore initially viewed as problematic. Tutors' familiarity with the demands of textuality would suggest that they would not rely on closed questions, but rather rely on open questioning strategies to stimulate enquiry. This, however, was not the case. Quantitative trends in the data showed that tutors rely predominantly on asking closed questions. Qualitative analysis of the data, however, suggested that these questions could be

used in a recitation process that could in fact serve to open, rather than close enquiry. Results suggest that it is the tutor's response to the learner's answer that determines whether enquiry will be opened or not. In the following example of recitation, the tutor sustains the enquiry by using factual questions to engage the learner in the process.

Tutor 3: Okay, when you are thinking of them think of the acronym OCEAN . So you can do it in that order so that you don't leave any out.

Student 2: Its openness to new experiences, conscientiousness,

Tutor 3: Okay what's the E?

Student 2: The E is extroversion/introversion.

Tutor 3: Okay the A?

Student 1: Agreeableness

Tutor 3: N?

Student 2: N is neuroticism.

Tutor 3: Okay,...

Hence, although the recitation process may initially appear limited, it seems to produce an interaction and develop a line of enquiry. The recitation processes recorded demonstrate a collaborative construction of meaning, with tutor and learners jointly constructing discourse. Further, recitation provides structure for learners, guiding their engagement with the text. Ultimately, this external structure may become internalised by learners enabling them to question the text in the way that tutors pose questions to them. Therefore, tutors' use apparently closed questions to sustain enquiry.

Recitation also serves a very basic purpose by getting students to speak and getting them involved in the topic. Where students are not able to freely engage in

discussion, tactics such as recitation at least serve to engage the students in the topic. It also serves to get students to think about the topic, directing their engagement by highlighting important conceptual facts. Recitation also keeps students in the conversation, focusing their attention and ultimately constructing the narrative by way of questions and answers. This characteristic of recitation is clearly needed by learners whose open questions evidence 'blurred and sweeping' engagement (Feuerstein, 1980). As these learners are unable to identify relevant foci from the text, by highlighting important conceptual issues, recitation can model the appropriate cognitive moves required for selecting crucial information. The need for such modelling is clearly indicated in the results by tutors' use of metacognitive questions and metacognitive instruction.

Another purpose that recitation serves is to check that students have understood the material in the text. As this is a text based course, recitation (getting them to 'recite' what they know) helps the tutor to see whether the students are in fact keeping up to date with their reading. Therefore, by pointing to gaps in a learner's knowledge base, recitation can serve as a foundation for the development of more sophisticated critical learning strategies.

7.6. Concluding Comments

In conclusion, while learners and tutors appear to ask the same kinds of questions regarding course content, further analysis indicates that these questioning strategies serve different functions for learners and tutors. Whereas tutors' use of open questions aimed at provoking enquiry point to tutors' reliance on a textual epistemology, learners' use of borrowed open questions does not suggest learners share this critical framework. However, although intended to provoke learning, tutors' open questions did not elicit open responses from learners, threatening to close,

rather than facilitate enquiry. Conversely, while learners asked closed questions in order to elicit closed responses from tutors, tutors' used apparently closed questioning strategies and open response strategies to initiate and sustain enquiry.

Further, tutors' relied almost entirely on answering even closed learner questions with open responses, facilitating enquiry. Finally, results indicated that learners' asked no process type questions, such as metacognitive and group cohesion questions. Consequently, one may conclude that their use of these types of questions and responses suggests that tutors control the tutorial process. Further this finding indicates that learners need this kind of structured guidance.

8. CONCLUSIONS

Whereas tutors make use of open question and response strategies reflecting the critical textual episteme of university study, learners' use of borrowed open questions does not indicate that they share this underlying 'open' cognitive processing. Similarly, findings indicated that learners and tutors differ in the way in which they use closed questions. Whereas tutors' often asked closed questions to open a narrative line of enquiry, learners' ask closed questions to elicit a direct answer. Finally, while both learners' and tutors' ask questions regarding the content of the course, only tutors ask questions that focus on the process of learning, such as metacognitive questions that monitor learners' engagement or group cohesion questions that facilitate the group process. This finding suggests that tutors' dialogue scaffolds and directs learners' engagement with academic enquiry.

8.1. Open questions

Engaging in academic enquiry requires that one is able to ask questions that are capable of opening critical discussion. Despite relying on primarily closed questions to initiate interaction, tutors did make use of open questioning techniques to provoke learning in students. Tutors use of textually based relational and implication questions to provoke enquiry indicated that they are familiar with the critical demands of textuality, however, these questions failed to elicit appropriate engagement from learners. Rather, learners produced closed responses or no responses at all to these types of questions. Therefore, tutors' open questions threatened to close enquiry. Although open questions failed to facilitate enquiry, they did serve a learning purpose, with tutors modelling the kinds of questions learners could ask of text and the kinds of questions typical of standard assessment procedures. Conversely, learners' did not use open questions appropriately, seeking merely to elicit factual information from tutors in the form of a 'model' answer. These open questions were borrowed from task, test or examination questions. In fact, learners do not really ask

open questions, rather they *imitate* them. Therefore, the most appropriate response from the tutor is to model engagement by turning the learner's open question into an authentic question, indicating what must be done in order to answer the question rather than providing the learner with an answer.

A particularly interesting result from a learning-teaching perspective is the finding that underprepared learners ask open questions that indicate a reliance on 'blurred and sweeping' engagement (Feuerstein, 1980). In chapter 7 it was noted that these questions point to a learner's inability to effectively exercise metacognitive control over the task demands or their problem solving activities in relation to the task. Reliance on asking these kinds of questions further points to learners' inability to engage with the ill-structured problems characteristic of examination questions in the Human Sciences. However, failure to engage with ill-structured problems should not be viewed as a problem that can be located within the individual student. Even borrowed questions can provide excellent mediational opportunities provided tutors' produce effective responses and scaffolding for learners. As these questions evidence no ability to select and structure knowledge appropriately, they indicate learners' need for structured interactions, both with text and with tutors. Thus, in tutorials tutors can model the process of open questioning and metacognitive strategies in dialogue for learners, demonstrating both how they should approach ill-structured questions, as well as ~~explicating the demands of particular tasks~~.

8.2. Ostensible versus real closure

The findings of the study indicate a need to re-evaluate the role of closed questions in relation to learning. Tutors' use of closed questioning strategies was initially viewed as problematic, given the need to open rather than close the process of enquiry. However, qualitative analysis of the interactive construction of dialogue

indicated that tutors sometimes use closed questions to initiate and maintain enquiry and that they open enquiry by producing open responses to learners' questions. One begins to understand how tutors' closed questions can provoke enquiry when investigating the response strategies they use. The tutor may ask a closed question, receive a closed response from the learner and use the learner's response to further open the discussion. Consequently, the possibilities for enquiry do not necessarily depend on the kind of questions asked, but rather on the interaction that develops from that question; open questions may close enquiry, eliciting no response from learners while conversely, a closed question may provoke enquiry depending on how the tutor uses the learner's response. This finding emphasises Shepherd's (1998) point that questions can only be fully analysed in relation to the discursive interaction they initiate rather than as isolated units. Therefore, although tutors ask ostensibly closed questions, these questions may promote learning. Conversely, learners' used closed questioning strategies to elicit factual (closed) responses from tutors, seeking to close, rather than open enquiry. Learners' desire to close enquiry in a final, 'true' answer indicates their reliance on a commonsense epistemology that has consequences for how learners approach university tasks. Textuality demands that learners are able to open enquiry, seeking to uncover the question that generates the text and to contemplate the questions 'in front of the text' (Ricoeur, 1980). As learners evidence no use of open questioning strategies or of appropriately open engagement with tutors' questions, we may conclude that a primary goal of the tutorial programme should be to develop this appropriate engagement.

8.3. Mediating Meaning: Tutorial dialogue addresses the problem of underpreparedness

Results indicate that tutors ask more questions than learners do and that they tend to dominate overall talk time. Further, tutors' use of metacognitive and group process questions indicates that tutors, rather than learners control and structure the

tutorial process. Learners' inappropriate questioning strategies in relation to text highlight the important role that tutorial interactions can serve in students' learning. As underprepared learners are so unfamiliar with the demands of textuality that they are not even sure where to begin their questioning or direct their focus, tutorials can serve a very useful mediational function. The data suggest that tutors' use of metacognitive and group cohesion strategies mediates learners' access to text, by explicitly elaborating the demands of the task as well as modelling what mental moves are required in order to answer a particular task. Hence, tutors can provide external regulation in dialogue. The blurred and sweeping nature of underprepared learners' open questions indicates a need for a structured learning environment in which the tutor can impose the structure that learners are unable to generate themselves. Findings from this study indicate that where learners are unfamiliar with the demands of text and are unable to respond to the second order mediation even a specifically designed learning text provides, first order mediation, such as a dialogical interaction with a tutor is necessary. If the demands of textuality are completely foreign to a learner, text alone can not effectively mediate learners' access to textuality. We have noted in the discussion that underprepared learners do not ask the kinds of questions required to engage with text; they do not evidence metacognitive control or the appropriate epistemic assumption that knowledge construction is a critical endeavour. This appears to suggest that especially where learners are underprepared for university, their access to text needs further mediation by a tutor. As tutors are familiar with the demands of textuality, they can verbally reformulate written texts during tutorial interactions, selecting relevant information from the text for learners and constituting the enquiry in appropriate ways. Especially where learners' evidence "blurred and sweeping" engagement, this kind of reformulation facilitates learners' access to written text (Feuerstein, 1980). It is therefore apparent from the data that tutorials provide learners with a flexible

learning-teaching environment in which their access to academic enquiry is mediated by tutors.

8.4. Further Research

While this research aimed at studying learners' and tutors' questioning strategies, it also raised many new questions that could be addressed. Consequently, the data are suffused with possibilities for future research. Particular areas deserving a deeper understanding and further research are discussed below.

- Of particular interest to the researcher is a comparative analysis between the kinds of questions that underprepared learners ask and the kinds of questions that learners who are well prepared for university (in the sense of having had access to appropriate mediated learning experiences during prior development) ask. The focus here would be on analysing differences in questioning styles, in order to uncover different epistemic assumptions informing them.
- One of the most interesting findings of this study is the finding that tutors' closed questions can initiate and sustain interaction, promoting learning. Findings regarding tutors' use of ostensibly closed questions to open a narrative line of enquiry need to be investigated in more depth, with specific focus being given to the role these kinds of questions play in the transition to other forms of questions and in learning within the university context.
- The tutorials at first year level provide learners with access to daily assistance. Consequently, one of the obvious worries confronting educators is that learners will not succeed in their second year where such assistance is not available. Therefore, learners who have benefited from the structure of the first year tutorials this year must be monitored throughout their second year of study in order to ascertain whether the tutorials have

effectively mediated learners' access to textuality and whether this has transferred to their reading, facilitating critical reading ability or whether they have disempowered learners, making them entirely dependent on tutorial assistance.

- Another area of particular interest for the researcher is the notion of identity and change, and how learning facilitates such change. Hence learners' identity and the changes it undergoes as they become more effective questioners, capable of putting themselves 'in question', needs to be further investigated (Miller, 1994).

8.5. Concluding Comments

In conclusion, questioning plays an essential role in learning. From the young child who uses expressive questioning to negotiate his/her environment to the adult learners who seek access to academia and new ways of operating on their world, questioning is an essential tool for learning. Where effective questioning strategies are not used, learners will be unable to negotiate the new world of textuality facing them at university. Consequently, these learners' access to textuality needs to be mediated. This study indicated that tutors and learners use similar questioning strategies for very different purposes. Whereas tutors' use of questioning strategies aims at initiating interaction and opening enquiry, learners' use of questions seeks to close off enquiry. Differences in tutors and learners question and response strategies indicate different levels of familiarity with the critical demands of academic enquiry and the epistemology of text. Finally, tutors' use of metacognitive question and response strategies indicate both that tutors' control the tutorial process and that learners require (and consequently elicit) this kind of structured assistance.

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APPENDIX A
INITIAL CODING SCHEDULE

Each sentence of the discourse was coded as either a tutor or learner strategy in accordance with the following coding schedule. The following refined, final coding schedule (6) was used to code tutor and learner strategies. Previous schedules were refined after the analysis of: 1 tutorial; 3 tutorials; 5 tutorials and 6 tutorials.

TUTOR STRATEGIES

Creating a sense of openness/belonging/group cohesion/social equity:	
TUTOR STRATEGY	DEFINITION
T.S.1.	Use of examples and/or metaphors/synonyms.
T.S.2	Relates unfamiliar to the familiar.
T.S.3	Uses gestures/changes tone of voice.
T.S.4	Laughs/jokes with group.
T.S.5	Shares personal experiences with group.
Questioning strategies:	
TUTOR STRATEGY	DEFINITION
T.S.6	Asks leading questions (fill in the gap style question).
T.S.7	Asks rhetorical questions.
T.S.8	Asks factual questions.
T.S.9	Asks conceptual questions.
T.S.10	Asks relational questions.
T.S.11	Repeats student's questions.
Dealing with Learner responses:	
TUTOR STRATEGY	DEFINITION
T.S.12	Completes/interrupts learner's response.
T.S.13	Allows learners to struggle to get the answer.
T.S.14	Repeats response.
T.S.15	Questions learner's response.
Action strategies:	
TUTOR STRATEGY	DEFINITION
T.S.16	Uses drawings and/or diagrams.
T.S.17	Uses other mediums (if so what).
T.S.18	Refers to text. (provokes independent learning)
T.S.19	Reads from the text.
T.S.20	Goes over learners' task/written responses and offers help
T.S.21	Direct teaching.
T.S.22	Recaps main points.
Eliciting co-operative/group work:	
TUTOR STRATEGY	DEFINITION
T.S.23	Uses peer interaction to provoke discussion/learning.
T.S.24	Solicits group responses. (Co-operative/group work).

LEARNER STRATEGIES:

Learner response: what are the learners doing in response to various tutor strategies?

Learner's response strategies:	
LEARNER STRATEGY	DEFINITION
L.S.1	Learners listen in silence
L.S.2	Learners react to elicited question a) answer tutor's question b) repeats tutor's question
L.S.3	Group response
L.S.4	Gives examples
L.S.5	Repeats tutor's explanation to gain clarity
L.S.6	Reads from text
Learner's initiate interaction:	
LEARNER STRATEGY	DEFINITION
L.S.7	Learners ask factual questions a) Linguistic clarification, meaning of English words. b) Content questions: e.g. (re Mendel's theory) "Is it the one about genes?"
L.S.8	Learners ask conceptual questions.
L.S.9	Learners ask relational questions.

After coding the data, as per schedule 6 above, the schedule was further refined to focus explicitly on tutor questioning (TQ) and response (TR) strategies and learner questioning (LQ) and response (LR) strategies.

APPENDIX B

TABLES

Table 7 (Elaboration of table 2, page 134) Proportion of overall discourse occupied by tutors' and learners' questions?

Date	Tutor	Discourse n=	L.Q. n=	L.Q. %	T.Q. n=	T.Q. %
18/3/99	1	768	27	3.52	136	17.71
23/3/99	1	533	39	7.32	103	19.32
26/3/99	1	601	54	8.99	132	21.96
13/4/99	1	554	49	8.84	82	14.80
14/4/99	1	613	21	3.43	142	23.16
22/4/99	1	429	27	6.29	116	27.04
29/4/99	1	473	16	3.38	125	26.43
29/4/99	1	538	13	2.42	135	25.09
4/5/99	1	287	17	5.92	42	14.63
TOTAL		4796	263	5.5%	1013	21.1%
5/5/99	2	340	10	2.94	45	13.24
10/5/99	2	454	34	7.49	47	10.35
TOTAL		794	44	5.5%	92	11.6%
29/4/99	3	258	8	3.10	66	25.58
3/5/99	3	576	24	4.17	105	18.23
6/5/99	3	276	4	1.45	38	13.77
10/5/99	3	408	13	3.19	78	19.12
TOTAL		1518	49	3.2%	287	18.9%

Table 7 illustrates the number of learner and tutor questions posed across tutors.

Actual numbers of questions posed as well as the proportion (represented as a percentage) of questions are recorded for both tutors and learners. Having identified how many questions learners asked, the analysis focused on which learners asked questions. Table 8 presents the data indicating which groups of learners asked questions.

Table 8: Proportion of the learners present who asked questions

Language group	Gender	Total present n=143	Of those present who asked questions n=83	What proportion of group asked questions %
L2	Female	93	50	54%
	Male	21	12	57%
Total		114	62	54%
L1	Female	21	15	71%
	Male	8	8	100%
Total		29	23	79%

Table 8 indicates that of all L2 females present, 54% asked questions. While 57% of the L2 males present asked questions. As a group, L2 learners asked questions 54% of the time. Although this group represents the largest group of learners present, these learners ask proportionately fewer questions than their L1 peers do. 71% of L1 females present ask questions. While all of the L1 males who attend tutorials ask questions¹. That is, of the L1 learners present (n=29) 79% asked questions. Therefore, L1 learners ask proportionately more questions than their L2 peers do. This result may be expected given that L1 learners and tutors (also L1 speakers) share discourse tendencies or 'habitus' (Corson, 1993; de Klerk, 1995)². Differences in the number of questions asked by L1 and L2 learners pointed to possible differences in the types of questions asked by both groups. The relationship between language group and questioning style is presented in table 8.1

Table 8.1. Relationship between language group and questioning strategies

Language group	LQ 1A Linguistic clarification Questions	LQ 1B Factual questions	LQ 1C Administrative questions	LQ 2 Open 'borrowed' questions	Total %
English First Language: L1	2%	68%	23%	7%	100%
English Second Language: L2	7%	55%	8%	30%	

Table 8.1. illustrates the relationship between L1 and L2 questioning strategies. In table 8 we noted that both L1 and L2 learners' ask questions, however, L1 learners ask proportionately more questions than their L2 peers do. This result is expected given that L1 learners and tutors (also L1 speakers) share discourse tendencies or 'habitus' (Corson, 1993; de Klerk, 1995). Interestingly, frequencies of LQ 1A, a linguistic clarification style question is not very different between the two groups. This

¹ This finding must be viewed in relation to the overall numbers of learners who attended tutorials included in this study. Viewed in this way, it is apparent that although all L1 males present ask questions, only 6% of all the learners present were L1 males.

result is counter-intuitive to what one would expect, namely that second language English speakers would ask more linguistic clarification style questions than their first language counterparts, who, by definition, are more fluent in English. Both language groups rely heavily on factual style questions (LQ 1A) (L1 $f=68\%$, L2 $f=55\%$). As the content of the Psychology IA course is unfamiliar for both language groups this result is expected. Differences in frequencies of administrative questions (LQ 1C) (L1: $f=23\%$; L2: $f=8\%$) reflect the different emphases learners from different language groups place on administrative matters, with L1 learners asking more administrative questions than their L2 peers. The most interesting finding from the comparison between language groups is the extent to which L2 learners ask borrowed open (LQ 2) questions as compared to their L1 counterparts. LQ 2 type questions evidence 'blurred and sweeping' engagement with questioning. These questions elicit limit setting responses from tutors and highlight learners' inability to engage effectively with the demands of academic enquiry. Moreover, many L2 learners have not yet sufficiently interiorised literacy to the extent that L1 learners (and tutors) have, hence they may struggle to engage critically with textual demands, due to an under developed critical or questioning stance towards knowledge construction. This is reflected in their proportionately higher ($f=30\%$) reliance on sweeping questions (LQ 2) than their L1 ($f=7\%$) counterparts, who can focus more precisely on what it is they want to know.

² Note however, that this is only one interpretation of what underlies differences in learners' questioning strategies. Another plausible interpretation may indicate possible different levels

Tutors' Questioning Strategies

Table 9: Tutor question types: frequencies per tutor

Tutor	Closed questions %			Open Questions %		Metacognitive questions %		Group cohesion Questions %	
	T.Q. 1A	T.Q. 1B	T.Q. 1C	T.Q. 2A	T.Q. 2B	T.Q. 3A	T.Q. 3B	T.Q. 4A	T.Q. 4B
1	3.9	19.6	23.4	12.9	1.6	10.8	7.6	6.6	12.7
2	4.4	6.5	52.2	7.6	0.00	14.1	2.2	7.6	1.1
3	1.1	10.1	39.7	3.8	0.00	9.8	2.1	25.4	3.8

Table 9 illustrates the percentage of each question type that each tutor relied on.

All tutors utilise factual questions (TQ 1C) most frequently (Tutor 1: $f^3=23.4\%$; tutor 2: $f=52.2\%$; tutor 3: $f=39.7\%$). This is an essentially closed (factual) question, eliciting closed responses from learners. Tutors' use of particular types of factual questions serves to bring learners' preunderstandings, or knowledge already possessed, to the fore. Generally, table 9 illustrates that all tutors tend to rely to the same degree on particular questioning styles.

Table 10: Actual number of questions recorded per tutor

Date	Tutor	T.Q. 1A	T.Q. 1B	T.Q. 1C	T.Q. 2A	T.Q. 2B	T.Q. 3A	T.Q. 3B	T.Q. 4A	T.Q. 4B	Total Q.
18/3/99	1	8	29	33	14	10	12	5	15	9	136
23/3/99	1	5	34	26	8	1	8	3	6	11	103
26/3/99	1	9	28	19	9	2	16	6	9	33	132
13/4/99	1	5	19	14	6	2	11	7	3	14	82
14/4/99	1	2	37	25	12	1	19	14	18	13	142
22/4/99	1	2	20	27	21	0	6	18	5	16	116
29/4/99	1	6	13	33	38	0	20	10	4	0	125
29/4/99	1	2	12	51	22	0	15	14	2	16	135
4/5/99	1	0	7	9	1	0	2	0	5	17	42
TOTAL		39	199	237	131	16	109	77	67	129	1013
5/5/99	2	2	2	25	4	0	5	1	4	0	45
10/5/99	2	2	4	23	3	0	8	1	3	1	47
TOTAL		4	6	48	7	0	13	2	7	1	92
29/4/99	3	0	2	27	3	0	14	3	10	4	66
3/5/99	3	2	1	44	5	0	8	1	34	7	105
6/5/99	3	0	0	17	1	0	2	0	15	0	38
10/5/99	3	1	26	26	2	0	4	2	14	0	78
TOTAL		3	29	114	11	0	28	6	73	11	287

of familiarity with the demands of textuality.

³ Where the letter 'f' designates frequency.

LEARNER RESPONSES

Table 11: Actual number of all learner responses across tutors

TUTOR	L.R.1A	L.R.1B	L.R.1C	L.R.1D	L.R.2A	L.R.2B	L.R.3A	TOTAL
1	23	11	18	10	4	9	0	75
1	28	10	8	5	4	4	0	59
1	36	13	15	3	7	8	0	82
1	47	22	2	5	10	7	0	93
1	51	2	7	4	1	10	0	75
1	49	2	5	9	8	1	0	74
1	74	14	0	20	2	5	0	115
1	65	5	10	14	3	2	3	102
1	12	3	2	6	3	0	0	26
TOTAL	385	82	67	76	42	46	3	701
2	28	4	0	3	0	14	0	49
2	41	3	0	0	0	30	2	76
TOTAL	69	7	0	3	0	44	2	125
3	37	5	0	6	0	6	0	54
3	64	30	0	0	21	34	21	170
3	21	11	0	15	0	13	1	61
3	32	26	0	14	0	17	0	89
TOTAL	154	72	0	35	21	70	22	374

Table 11 illustrates all learner response strategies. Note that these strategies are not necessarily used in response to a tutor question; that is a learner may respond to her own or another learner's question.

Table 12: Learners respond to a question by posing a question

Tutor Question	LQ1B: Factual question	LR1D: Clarification question	LQ1C: Administrative question	LQ2: Open 'Borrowed' question
TQ 1A	0	2	0	0
TQ 1B	0	0	0	0
TQ 1C	2	5	0	0
TQ 2A	2	5	0	0
TQ 2B	0	7	0	0
TQ 3A	3	5	1	1
TQ 3B	0	4	0	0
TQ 4A	2	7	1	1
TQ 4B	12	6	6	21

Table 12 illustrates the number of times learners respond to tutors' questions by posing their own questions. ⁴It is immediately evident that such questioning responses are rare. However, note that TQ4B, a strategy aimed at eliciting group responses, elicits a number of questioning responses from learners.

Learners' Questioning Strategies

Table 13: Learner questions: Frequencies per tutor

Tutor	L.Q. 1A % Linguistic clarification	L.Q. 1B % Factual	L.Q. 1C % Administrative	L.Q. 2 % Open 'borrowed'	TOTAL
1	2.7	57.7	17.5	22.2	100%
2	1.9	81.1	0	17	100%
3	17.9	66.1	3.6	12.5	100%

Table 13 illustrates learners reliance on factual questions (LQ1B) across tutors (tutor 1: f=57.7%; tutor 2: f=81.1%; tutor 3: f=66.1%). Trends across tutors for factual (LQ1B) and open questions (LQ2) are similar across all tutors, suggesting that for these question types, different tutors do not significantly influence the frequency of the learners' questions.

⁴ Note, percentages do not add up to 100, as other response strategies, besides learners' questions are elicited by these tutor questions.

LEARNER QUESTIONS

Table 14: Actual number of learner questions across tutors

TUTOR	Numbers of learners	L.Q.1A	L.Q.1B	L.Q.1C	L.Q.2	TOTAL
1	12	1	26	0	17	44
1	12	4	21	14	15	54
1	23	3	29	22	9	63
1	15	0	39	10	6	55
1	15	0	17	4	15	36
1	5	0	19	8	2	29
1	1	1	15	0	1	17
1	13	0	13	0	3	16
1	26	0	16	1	7	24
TOTAL	122	9	195	59	75	338
2	3	1	9	0	7	17
2	3	0	34	0	2	36
TOTAL	6	1	43	0	9	53
3	3	1	7	0	1	9
3	3	7	16	1	2	26
3	6	1	2	1	0	4
3	3	1	12	0	4	17
TOTAL	15	10	37	2	7	56

Table 14 presents actual numbers of types of learner questions, per tutor.

Tutor Response Strategies

Table 15: Actual number of all tutor responses.

TUTOR	Open response			Closed		Group Cohesion		Metacognitive instruction		TOTAL
	T.R. 1A	T.R. 1B	T.R. 1C	T.R. 2A	T.R. 2B	T.R. 3A	T.R. 3B	T.R. 4A	T.R. 4B	
1	240	35	0	59	2	67	11	0	5	419
1	155	4	0	80	1	44	11	5	2	302
1	36	11	3	72	3	46	19	1	7	198
1	167	3	7	69	0	40	10	39	2	337
1	184	15	7	60	0	40	17	0	3	326
1	165	26	3	55	2	23	18	14	3	309
1	117	14	27	44	5	17	6	2	0	232
1	179	5	18	29	1	22	5	0	3	262
1	116	18	4	23	2	12	1	3	5	184
TOTAL	1359	131	69	491	16	311	98	64	30	2569
2	170	9	0	11	0	12	3	0	0	205
2	207	5	2	30	6	12	1	0	5	268
TOTAL	377	14	2	41	6	24	4	0	5	473
3	92	1	2	17	3	14	4	0	3	136
3	80	5	6	72	18	38	2	0	1	222
3	108	2	12	19	5	5	1	8	0	160
3	149	0	4	40	3	8	1	0	0	205
TOTAL	429	8	24	148	29	65	8	8	4	723

Table 15 illustrates all tutor response strategies. These responses are not necessarily used in response to a learner question. Tutors may answer their own questions, especially where learners do not engage with the question.