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Disciplinary learning through writing: an investigation into the writing of undergraduate education students

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DISCIPLINARY LEARNING THROUGH WRITING:

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UNDERGRADUATE EDUCATION STUDENTS

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ABSTRACT

For many academics and students the role of language, particularly writing, in constructing knowledge and in 'learning to mean' in a disciplinary context remains unexamined. This thesis investigates the ways in which undergraduate students learn specialist knowledge through writing. The disciplinary context of the study is pre-service primary teacher education in a Faculty of Education at one Australian university. Systemic functional linguistics and genre theory provide the theoretical framework for the study as well as the main analytical tools. The research methodology is an integrated one, drawing on discourse analytical and linguistic approaches as well as a small amount of ethnographic data.

The findings of the research relate to two areas. The first area is the nature of learning to mean in a specialist disciplinary context. In this study, the tutors' written feedback on the students' assignments appeared to play only a minor role in the students' socialisation into the discursive practices of the discipline. On the other hand, the students' introductory textbook was seen to play a major role in shunting the students from commonsense understandings of child development to more uncommonsense disciplinary ones. The second area is the relation between disciplinary learning and writing. At the level of genre through the writing of Expositions, Discussions and Evaluative Accounts, the pre-service education students developed several thinking and learning processes. These included developing a logical argument based on evidence, engaging with recent research and assessing the implications of research and theories for the classroom. The findings also showed that Micro-genres functioned as 'textual learning bridges'. These textual learning bridges allow the student, for example, to review, explain or clarify his or her understanding of a particular concept or phenomenon. The investigation at clause level into the ideational meanings in the students' texts showed that the processes of naming, defining, taxonomising, reasoning, reporting knowledge claims and engaging with disciplinary knowledge were the main means through which the students built up their own semiotic map of the discipline.

The study's findings have the potential to inform the development of functionally oriented writing pedagogies as well as the thematisation of the role of language for thinking and learning in pre-service teacher education. It is hoped that such a strategy would not only aid the students' writing and learning of specialist knowledge at university but also assist them in their future role as classroom practitioners.

CHAPTER 1

INTRODUCTION

This chapter provides the background and motivation for the study, and reviews the literature surrounding the study's major concern, that is, the relation between disciplinary learning and writing. The study itself is then introduced, and the chapter closes with an overview of the thesis chapters and explanations of key terms.

1.1   MOTIVATION FOR THE STUDY

Language, particularly in the written mode, is central to tertiary learning. It is the main resource through which students are introduced to the specialist worlds of academic disciplines. The written texts of students are also the main means through which the processes of disciplinary learning, such as naming, classifying, establishing causal relations, making connections between theory and practice and so on, are realised. Students' ability to engage successfully in disciplinary learning is therefore directly related to their ability to access disciplinary knowledge through language, and to learn to write in ways that are valued in the academic context.

For many academics and students, however, the role of language in constructing knowledge and in 'learning to mean' in a disciplinary context remains unexamined. For lecturers, this often has the consequence that problems with students' academic writing are explained in terms of a deficit model. Students are regarded as having either developed the necessary literacy skills for university, or if not, as being in need of intervention to address their literacy shortcomings. For students, the unfamiliar literacy practices of academic disciplines can be confusing and contradictory, seeming to have little relevance beyond the context of the university. A more detailed understanding of the role writing plays in disciplinary learning could greatly contribute to current debates on student literacy, lecturer and student engagement

with issues of language and learning and the development of effective writing pedagogies.

The motivation for this thesis is to address the concerns of lecturers and students about tertiary literacy by concentrating on the learning dimension of writing. By addressing the question, "In what way does writing contribute to students' disciplinary learning?" the study aims to make available informed understandings about the role of writing for students' learning of specialist disciplinary knowledge. The findings of the study will contribute a functional perspective to tertiary literacy debates, and assist with engaging lecturers and students with issues of tertiary writing. The findings should also inform the development of functionally oriented writing pedagogies. Writing pedagogies that take into consideration the learning function of writing would serve not only to assist students to learn to write at university, but to write to learn.

In order to gain insights into the role of writing for learning specialist knowledge, the researcher has undertaken a longitudinal study of students' writing in one disciplinary context. Systemic functional linguistics and genre theory provide the theoretical framework for the study as well as the main analytical tools. The context of the study is pre-service primary teacher education in a Faculty of Education at one Australian university. The longitudinal framework of the study allows for a comprehensive investigation of learning processes mediated through writing, as well as an investigation into the students' writing development as their disciplinary knowledge increases.

The following literature review canvasses three converging strands of research on language and tertiary learning which have informed this investigation into students' learning through writing. The first strand is the role of language and context in constructing disciplinary knowledge. The review of this strand of research includes a comparison of the literature on the nature of mature disciplinary discourses with literature on the nature of pedagogic discourses[1] such as those which students

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[1] Operational definitions for key terms are provided at the end of this chapter.

experience in introductory textbooks. It also considers the oft-cited metaphor of apprenticeship to characterise the process of learning to write in a disciplinary context. The first section of the review closes with a discussion of a highly valued textual practice in the tertiary context: that of critical analysis.

The second strand of research is concerned with learners accessing and negotiating disciplinary knowledge. Specifically it is concerned with changes in the student population which have resulted in a sharper focus on questions of student literacy and suitable writing pedagogies. The final strand focusses on approaches to teaching tertiary literacy and their theoretical underpinnings. The literature review closes by reviewing the status of language in tertiary learning.

1.2 THE ROLE OF LANGUAGE AND CONTEXT IN CONSTRUCTING DISCIPLINARY KNOWLEDGE

That disciplinary knowledge is socially and rhetorically constructed has been argued of disciplines within the sciences (Haas 1994; Hyland 2000; Knorr-Cetina 1981; Latour & Woolgar 1979; Myers 1996; Thomas & Hawes 1994), and academic disciplines generally (Bazerman 1992; Hyland 1999a; Swales 1990). Within this social constructionist perspective of knowledge, academic disciplines are frequently described as 'discourse communities' (for example, Bazerman 1988; Berkenkotter, Huckin & Ackerman 1991; Bizzell 1982, 1992). The term discourse community foregrounds the linguistic and contextual dimensions of disciplinary knowledge. Members of academic discourse communities are seen to share certain language using practices, canonical knowledge and approaches to interpreting experience (Bizzell 1992). While members may have shared beliefs and knowledge, academic discourse communities are unlikely to be homogeneous sites of consensus. As Bazerman (1992) has pointed out, they are more likely to be sites of "heteroglossic contention" (p.63), as researchers debate the merits and shortcomings of research findings and theories in forums facilitating the exchange of ideas. The notion that academic discourse communities are sites of heteroglossic contention has important consequences for the ways in which language is used to make knowledge claims. In

academic writing, making knowledge claims involves not only reporting information, but also negotiating with prior texts and persuading the community to accommodate new and possibly conflicting claims (Bazerman 1992; Hunston 1994; Hyland 2000). In the case of conflicting claims, writers can engage in politeness strategies so as to co-exist in the discourse community (Hyland 1999b; Myers 1996, 1999).

The conception of disciplinary knowledge as socially and rhetorically constructed is taken further in systemic functional theory as developed by Michael Halliday (1985/1994) and his colleagues (for example, Martin 1992; Matthiessen 1995). In systemic theory, language is seen as playing a fundamental role in constructing knowledge. Halliday (1998) describes the grammar of a language as 'construing experience'.

> What the grammar does, in its ideational guise, is to transform human experience into meaning. The grammar construes a universe of things and relations, imposing categories on our perceptions of phenomena; in other words, it sets up a *theory* of experience, modelling the immensely complex interaction between the human organism and its environment. (1998: 186-187)

In scientific discourses, in which aspects of experience or phenomena are the focus of investigation, processes are reconstrued as entities or things, and through the grammar new meanings are created. According to Halliday (1999), the specialist language of science is not just the use of specialist terms and labels, but a discourse in which processes are reconstrued in new modes of meaning. Therefore, specialist knowledge of the disciplines is seen as indivisible from their discourses (Halliday & Martin 1993; Hasan 1996).

1.2.1   Conceptions of Disciplinary Knowledge

Halliday's notion of language reconstruing experience into new modes of meaning has parallels with Basil Bernstein's (1975) concept of 'uncommonsense' knowledge. Bernstein distinguishes between commonsense and uncommonsense knowledge, comparing the commonsense world of everyday experience grounded in the tangible, with uncommonsense, more abstract ways of interpreting experience in the

disciplines (Bernstein 1975). Furthermore, Bernstein argues that the nature of disciplinary knowledge changes according to how far a student progresses in his or her education. Disciplinary knowledge becomes "not coherence, but incoherence: not order, but disorder, not the known but the unknown" (Bernstein 1975: 97).

Bernstein's observations about the dynamic nature of much disciplinary knowledge provide important insights for the theoretical framing of this thesis. Firstly, his observations about disciplinary knowledge are the reverse of folk understandings of university learning. In folk understandings of university learning, disciplinary knowledge is seen as a learnable commodity, consisting of a canon of core knowledge that is transmitted to students via authorities such as textbooks and experts in the field. A transmission model of disciplinary learning, however, does not take into account the role of participants and social practices in shaping ways of meaning in disciplinary contexts. For expert participants, learning should involve questioning and exploring transmitted knowledge, practices which are valued in the disciplinary context because they can lead to new understandings and new meanings being created.

Secondly, Bernstein's conceptualisation of disciplinary knowledge as hierarchically organised from the "known to the unknown" suggests that learners and experts view disciplinary knowledge differently. One way to consider the ways in which novice students experience disciplinary knowledge is to adopt the concept of an academic discourse community. For this study the concept of an academic discourse community is developed and adapted as a framework for investigating how novice students view disciplinary knowledge and how they learn to mean in a disciplinary context.

1.2.2 Novice Students and Academic Discourse Communities

In Figure 1, the components of an academic discourse community are provisionally conceptualised for the purposes of this study. This conceptualisation of an abstract

construct facilitates an exploration of the relations between participants and their perceptions of disciplinary knowledge.
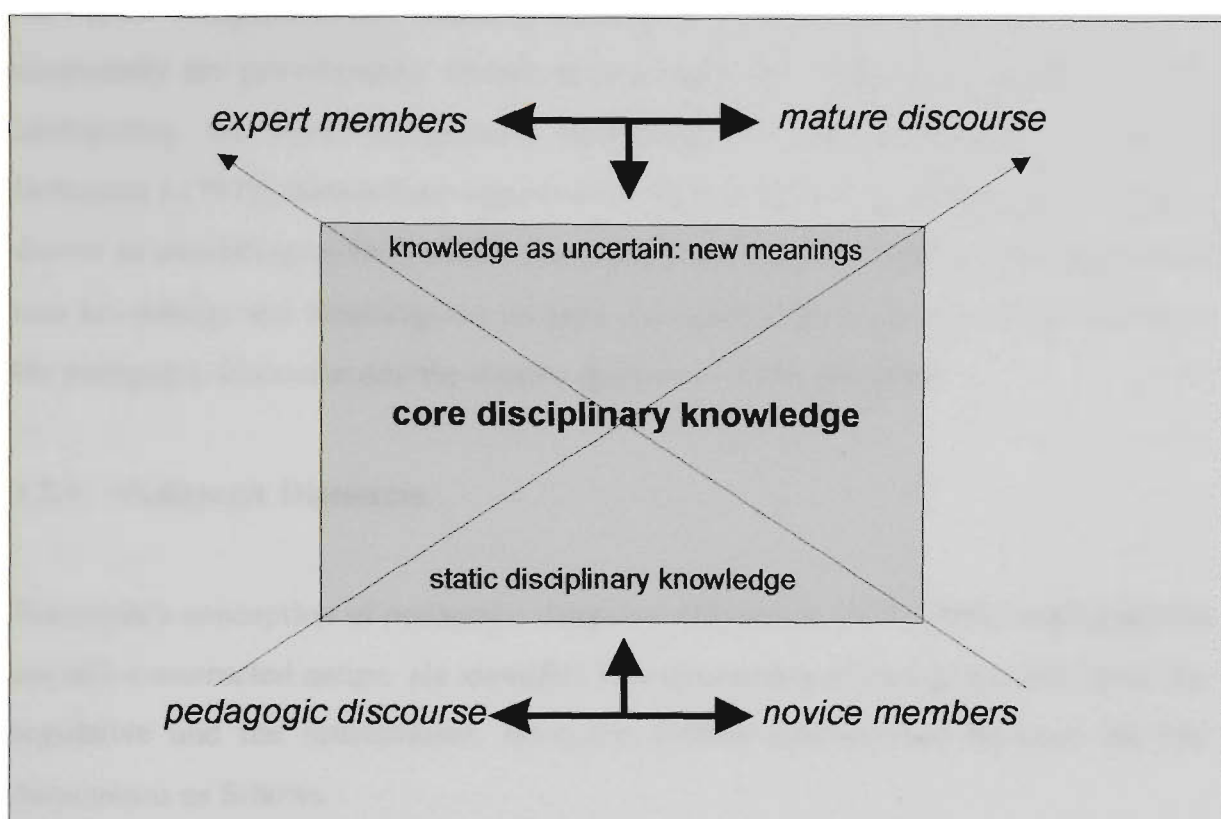
Figure 1 Elements of academic discourse communities

This conceptualisation of a discourse community, however, is not intended to represent an homogeneous fixed entity, rather an abstract site in which discourses and their disciplines overlap, "border skirmishes" (Bazerman 1992: 63) with other discourse communities occur, and where the affiliations and ideologies of its members are diverse. For example, academic discourse communities may include vocationally oriented members such as school teachers as well as members who are primarily academics involved in research and teaching. The concept of a 'discipline' is likewise not intended to represent a monolithic concept, rather it can include multidisciplinary influences as well as theoretical and applied approaches. Member engagement with the discourse community can vary considerably with discourse communities as can duration of membership. Undergraduate education students

studying to be teachers, for example, may only briefly experience the academic discourse of education and its associated discourses.

As Figure 1 shows, novice students and expert members of an academic discourse community are provisionally viewed as polarised yet connected by a diagonal line intersecting the core disciplinary knowledge of the community. Reflecting Bernstein's (1975) hierarchical organisation of disciplinary knowledge, knowledge is shown as consisting of both static, canonical knowledge, as well as a domain where new knowledge and meanings are created. A similar relation is seen to exist between the pedagogic discourse and the mature discourse of the discipline.

1.2.3   Pedagogic Discourse

Bernstein's conception of pedagogic discourse (Bernstein 1975, 1990) emphasises its socially constructed nature. He identifies two dimensions of pedagogic discourse: the regulative and the instructional. Bernstein (1990) distinguishes between the two dimensions as follows:

> We shall call the discourse transmitting specialized competences and their relation to each other *instructional* discourse, and the discourse creating specialized order, relation, and identity *regulative* discourse.
> (Bernstein 1990: 183, original italics)

According to Bernstein (1990), the regulative aspect of the discourse is the dominant aspect. The instructional discourse is described as embedded within the regulative one, as it is the regulative discourse which selects, orders, and guides what is transmitted and learned. The embedding of the instructional discourse in the regulative one results in the recontextualisation of the original discourse (Bernstein 1990). It is relocated from another context and recontextualised into a pedagogic discourse for the purpose of the other discourses' "selective transmission and acquisition" (p.184). For Bernstein, the recontextualising principle of the pedagogic discourse results in the severing of its ties with the original discourse:

> In this sense, pedagogic discourse cannot be identified with any of the
> discourses it has recontextualised. In this sense it has no discourse of
> its own, other than a recontextualising discourse. (Bernstein 1990:
> 184)

Bernstein's emphasis on the dissimilarity between a pedagogic discourse and the original discourse it has recontextualised has implications for this study and the ways in which students are positioned in relation to the mature discourse of the academic discourse community.

Similarly, the writing of undergraduate students can be seen to have little in common with the discursive practices of the mature academic community. While mature academic writing must negotiate with prior texts in order to make knowledge claims, undergraduate writing can be interpreted as a form of 'knowledge telling' (Bereiter & Scardamalia 1987), functioning to reproduce rather than contribute to disciplinary knowledge. Students experience the discourse of the community via the recontextualised pedagogic discourse, and often rely on their textbooks, a major site of recontextualised knowledge, to research their written assignments.

The introductory textbook is the main repository of pedagogic discourse for undergraduate students. The textbook, Bernstein writes, "orders knowledge according to an explicit progression, it provides explicit criteria, it removes uncertainties and announces hierarchies." (1975: 127). That the textbook is a site of static, canonical knowledge of the discipline is attested in part by the number of editions of a typical textbook: new editions which may only contain minor alterations. The static nature of textbook knowledge[1] is to be expected, as the function of the genre is to make disciplinary knowledge accessible to the novice, rather than convince a skeptical professional audience of potentially disputable claims as in the research article genre (Hyland 1999a). This means that in some respects the pedagogical discourse is an unsuitable mode for apprenticing students to the specialist ways of interacting with other discourse community members via

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[1] In some fields such as composition studies, textbooks are seen as a contribution to the theory and pedagogy of the discipline (Alfred & Thelen 1993; Swales 1995).

written texts. That is, the pedagogic discourse does not sufficiently reflect the tensions and dynamic nature of the mature discourse and its discursive practices. In other respects, however, introductory textbooks have been seen to play an important role in inducting students into a discipline's distinctive ways of constructing knowledge (Love 1991, 1993; Woodward-Kron in press). The role of textbooks in apprenticing students to the specialist worlds of the disciplines is taken up in the following section.

1.2.4 Learning the Discourse of a Discipline: The Apprenticeship Metaphor

Much of the research into how novice students experience and learn the discursive practices of their disciplines draws on the metaphor of apprenticeship (for example, Berkenkotter & Huckin 1995; Drury & Webb 1991; Freedman 1987). The apprenticeship metaphor implies that students work together with an experienced member of the discourse community in order to learn the specialist disciplinary ways of meaning. This process is interpreted as similar to the one Lave and Wenger (1991) have described as 'legitimate peripheral participation' in communities of practice. The result of the apprenticeship process would be that students gradually shift from peripheral participation to become fully-fledged members of the discourse community.

Berkenkotter and Huckin (1995) adopt the apprenticeship metaphor and refer to the process of disciplinary learning as a 'cognitive apprenticeship'. They contend that the learning of disciplinary genres is similar to the process of second language acquisition, "requiring immersion into the culture and a lengthy period of apprenticeship and enculturation" (p.13). However, Berkenkotter and Huckin point out that while the cognitive apprenticeship model is valid for graduate students, it does not accurately describe the ways undergraduate students experience the disciplinary discourse. According to Berkenkotter and Huckin, this is because undergraduates mostly learn via pedagogic genres, genres which only share some of the features of the disciplinary genres.

A number of researchers have criticised the apprenticeship metaphor as well as Berkenkotter and Huckin's cognitive apprenticeship model. Belcher's (1994) research into the writing environment of graduate students has caused her to question the validity of the cognitive apprenticeship model. She argues that within the cognitive apprenticeship model mentors are considered to automatically model the discipline's discursive practices. She reports, however, that some graduate advisors fail to provide the necessary scaffolding for graduate students. Similarly, Candlin and Plum (1999) argue that the validity of the apprenticeship metaphor needs to be tested by considering participant accounts and perspectives. In their study of undergraduate psychology students, Candlin and Plum found little evidence in the students' focus group discussions that students considered themselves as being 'apprenticed' in the discipline of psychology. Candlin and Plum conclude that the psychology students in their sample lacked opportunities for any 'legitimate peripheral participation'. These findings are echoed by Gollin (1998) in her study of computing students' writing. Candlin and Plum (1999) prefer the term *induction* to describe the mediated but not unproblematic process of educating undergraduate students in the discursive and epistemological practices of the disciplines.

Significantly for the study described in this thesis, Plum and Candlin (2002) also point out that the extent to which a discipline explicitly frames its literacy and knowledge making practices for students depends on the vocational orientation of the discipline. Another consideration for this thesis regarding the apprenticeship metaphor is the orientation of the mature discourse community. In a vocationally oriented academic discipline such as Education, the mature discourse community members could consist of school teachers and education academics. In regards to the apprenticeship metaphor, the question arises which groups' textual practices are more influential for the undergraduate trainee teachers. This issue is taken up in the contextual background chapter of this thesis, Chapter Four.

The apprenticeship metaphor is also used by researchers investigating the ways in which pedagogic texts such as introductory textbooks introduce students to specialist knowledge. In the context of educational linguistics, research conducted in primary

and secondary school classrooms in Australia suggests that the apprenticeship of students into the discourses of specialist subjects begins well before university (Coffin 1997; Martin 1991; Martin et al. 1991; Rose 1997; Veel 1997; Veel & Coffin 1996). Drawing on systemic functional linguistics (Halliday 1994) and genre theory (Martin 1985, 1992), educational linguists have mapped the developmental stages of several discourses of specialist subjects in primary and junior secondary school. By identifying the privileged and privileging ways of meaning (Bernstein 1990) at different stages in the curricula of specialist subjects, the learning apprenticeship in these subjects is generally characterised as a shift away from commonsense meanings located in everyday experience, to uncommonsense ways of interpreting phenomena and events. Shifts towards the uncommonsense ways of meanings may be intrinsic to the apprenticeship of students into the discourse of a specialist subject. However, the frequently invisible nature of the privileged and privileging meanings can hinder or arrest students' progress in the apprenticeship. Therefore a major focus of this textbook based research has been to identify and make explicitly available to students written features of disciplinary discourses and their genres. Students' ability to access and engage with disciplinary knowledge is the focus of Sub-section 1.3.

1.2.5 The Role of Marker Feedback

One practice that can influence students' induction into a discipline's discursive practices is providing marker feedback on student assignments. Providing marker feedback is an opportunity for the experienced members of the discourse community to frame the discipline's discursive practices for novice members (Plum 1998; Spinks 1998; Tang 1999). Spinks (1998) found that in her data collected from Psychology some tutors' comments encouraged students to identify with psychology as an intellectual community by engaging with issues and taking risks within the discourse.

While marker feedback can play a socialising role in students' disciplinary learning, it follows that it is also likely to restrict and exclude ways of writing which are not valued by the discipline. The distinctive ways in which discourse communities construct knowledge raise questions about the extent to which their discourses can

exclude the prior experiences of novice members, particularly those who may not share the same beliefs and values of the discourse community. Lillis (1997) found that academic discourse marginalised non-mainstream students and their experiences, findings that have been echoed by Cadman (1997), Casanave (1992), Farrell (1996, 1999), Ivanic (1997) and Ivanic and Simpson (1992). The restrictive dimension of academic discourses is compounded by the gate-keeping role of assignment marking. Despite the marginalising of their experiences, it seems that in order to succeed students still need to adopt the beliefs and specialist ways of writing which are valued in the discourse community.

Since a major concern of this thesis is the social dimension of disciplinary learning through writing, the role of marker feedback in developing students' writing practices needs to be considered. This issue is addressed in Chapter Four.

1.2.6 Critical Analysis in Higher Education

Thus far this literature review has argued for the role of language and context in constructing knowledge and learning to mean in a disciplinary context. The concept of discourse community has been introduced to emphasise the linguistic and contextual dimensions of learning in a discipline, while the discussion of novices and apprenticeship has problematised issues relating to students' learning of discursive practices. The discussion has focussed on the disciplinary aspect of students' learning rather than the institutional. In this final section on the role of the linguistic and social dimensions of disciplinary knowledge and learning, the institutional context of the university and the types of literacy practices it values for learning are considered.

In Western tertiary contexts, critical analysis is firmly established as one of the most desirable characteristics of undergraduate writing. It is regularly named as a necessary component of successful writing in subject guidelines, assessment criteria, writing guides (for example, Clanchy & Ballard 1981; Germov 2000; James et al. 1995) and in evaluative commentary in marker feedback (Spinks 1998). The terms

'critical analysis', 'a critical approach', and 'critical thinking'[1] are frequently used to characterise the approach required in undergraduate writing and in student learning generally. In the disciplinary domains of the philosophy of education and cognitive psychology, critical analysis and critical thinking are often framed as transferable skills and educational ideals (Norris 1992). For example, in Australia, analysis and critical thinking are regarded as desirable graduate attributes (Department of Education, Training and Youth Affairs 2000; National Board of Employment, Education and Training 1992). The processes of critical analysis and critical thinking are seen as playing an intrinsic role in lifelong learning as well as contributing towards 'citizenship' education, in which graduates learn to act and reflect upon the world to facilitate change (Heath 2000). Not surprisingly, teaching innovations which aim to develop socially aware graduates and aim for students to use higher order thinking processes have been an enduring feature in the tertiary teaching and learning literature (for example, Biggs 1999; Taylor 1994).

The prevalence of the terms critical analysis and critical thinking in the tertiary context does not mean that these concepts are widely understood amongst students, nor that lecturers are adept at explaining what critical analysis in writing involves. Indeed, the concepts of critical analysis and critical thinking are notoriously difficult ones to unpack for novice students (Bizzell 1992; Farrell et al. 1997; James et al 1995). Subject guidelines and assessment criteria rarely include definitions of analysis or 'critical' analysis. They also rarely include accessible explanations or examples of critical analysis in writing. Indeed, the failure to provide adequate support for students in understanding the specialist literacy practices of the institution and discipline is a recurring theme in this literature review.

Since language, particularly in the written mode, is central to the way disciplinary knowledge is constructed and transmitted, an intrinsic part of disciplinary learning is learning the discursive practices of the discipline. While expert members of a discipline share knowledge about the discursive practices of their community, this

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[1] Ennis (1992) describes critical thinking as belonging to a network of terms which includes problem solving, decision making, metacognition, rational thinking and reasoning.

knowledge is mostly tacit (Swales 1990). Not surprisingly, it is therefore a form of knowledge that is rarely explicitly taught in the tertiary context (Ballard & Clanchy 1988; Drury & Webb 1989). Similarly, students are seldom given support in conceptualising the disciplinary context of their learning and the associated discursive practices (Lea & Street 1999). With the absence of any such scaffolding or support, the process of learning a discipline's discursive practices becomes for many students a process of trial and error (Baldauf 1997).

A contextually informed description of critical analysis in writing can be built up by investigating the participant perspectives of critical analysis, identifying the defining features, and locating these characteristics in successful students' writing. Unpacking the concept of critical analysis in primary teacher education and identifying the characteristics of critical analysis in writing are major concerns of Chapter Four.

1.3   LEARNING TO WRITE IN A CHANGING UNIVERSITY CONTEXT

This section considers significant changes that have occurred in the Australian tertiary sector, the resulting culturally and socially diverse student population, and the ability of a diverse student population to come to terms with the literacy practices of the academy.

In the past two decades in Australia, the higher education sector has experienced significant changes and restructuring (National Board of Employment, Education and Training 1996). One change has been the shift in the student population from predominantly Anglo-Saxon middle class to a culturally and socially diverse student population. This is the result of increased access to university education for a broader spectrum of the population. It also reflects the changing demographics of contemporary Australia. The change in student population has drawn attention to students' ability to adopt the literacy and cultural practices of the university. Students from middle class backgrounds, according to Bernstein (1990) and Hasan (1996), are more likely to successfully engage with the objective and 'uncommonsense' nature of educational discourses as they share the same semantic orientation. Similarly,

Bourdieu and Passeron (1990) maintain that students' ability to "manipulate and decipher complex structures" depends to a degree on the complexity of the language spoken in the home environment (p.73). This ability, or *linguistic capital,* is seen by Bourdieu and Passeron to have an influence throughout the educational system, and is particularly evident in the tertiary context.

Corson (1985) argues that a significant factor in educational failure for working class students is a 'lexical bar'. This refers to the high proportion of words in educational discourses with Graeco-Latin origin which can hinder the educational progress of students from lower socio-economic backgrounds. According to Corson, the difficulty some students from lower socio-economic backgrounds experience with educational discourses is not due to any deficit in the students' intellectual capacity to engage with these discourses. Rather, it is due to factors that limit the lexical range of poorer working class families. These include the constraints of small incomes in providing life experiences, such as making available a wide range of reading materials in the home. Intrapersonal factors include limited modelling of a range of linguistic behaviours and limited motivation for academic learning (Corson 1985).

Cultural background is another factor that can impinge on students' academic achievement. As Ballard and Clanchy (1991) point out, students from non-Western backgrounds have different expectations and understandings of university culture and its literacy practices. Indeed, the marginalising dimension of academic discourses for non-traditional students, such as low socio-economic status students, non-English speaking background students and Aboriginal students, is a recurring theme in the literature on academic writing and learning (Cadman 1997; Casanave 1992; Farrell 1996, 1999; Ivanic 1997; Ivanic & Simpson 1992; Lillis 1997).

Another change that has repercussions for students' tertiary literacy is the fragmentation and reorganisation of traditional academic disciplines (Hodge n.d.). Hodge (n.d.), as well as Candlin and Plum (1999), point out that writing in the "post-modern and fragmented world of the academy" (Candlin & Plum 1999: 195) involves increasing complexity. For students undertaking inter-disciplinary studies

there is the complexity of the students encountering a range of text types as well as texts that blur generic boundaries. Students are also likely to encounter conflicting epistemologies and discursive practices, as practitioners in the emerging sub-disciplines seek to stabilise and clarify their knowledge making practices (Hodge n.d.).

1.4 DEVELOPMENTS IN TEACHING ACADEMIC LITERACY: THE AUSTRALIAN CONTEXT

The shift away from a homogeneous student population has had significant repercussions for institutional practices and policies addressing issues of tertiary literacy. The implicit model of inducting students into the discursive practices of the disciplines is no longer the dominant model of learning to write at university. In Australia, tertiary institutions are increasingly providing a range of policy driven initiatives to respond to the literacy needs of a diverse student population[1]. There is also increasing recognition that all students, not only non-traditional university students, would benefit from more explicit forms of induction, in which the valued literacy practices of the university and the disciplines are made transparent (Chanock 1994). This assumption has as its underpinning that learning in the disciplines involves not only learning new forms of knowledge, but also coming to terms with the distinctive ways in which the disciplines use language to create knowledge. In order to assist students to become familiar with the culture of the university and its sub-disciplines, tertiary literacy practitioners have been urged to adopt an 'anthropological approach' (Ballard & Clanchy 1988). In their influential article, Ballard and Clanchy (1988) argue that becoming literate in the university involves "learning to 'read' the culture, learning to come to terms with its distinctive rituals, values, styles of language and behaviour." (p.8). According to Ballard and Clanchy, the task of tertiary literacy advisors is therefore to make explicit to students the

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[1] For a description of the range of services provided by Australian tertiary institutions to respond to student diversity, see the National Board of Employment, Education and Training (1996) and Baldauf (1997).

values, behaviours and literacy practices of the culture of the university and the sub-cultures of the disciplines.

One model of academic support drawing on an anthropological approach is the integration model. In this model, academic literacy practitioners and subject co-ordinators work together to integrate teaching about aspects of writing in the discipline into curriculum design (Baskin 1994; Ingleton & Wake 1997; Jones & Bonanno 1995; Skillen et al. 1998; Webb et al. 1995). A feature of integration models is the move towards explicitness in making available to students many of the assumptions that inform tutors' and lecturers' responses to students' writing. For example, subject outlines can include detailed assessment criteria covering content and writing requirements as well as annotated models of successful writing.

Another important development in the Australian context has been the growth of pedagogically driven research informed by applied linguistics. Systemic functional linguistics and genre theory as developed by Jim Martin and colleagues (for example, Callaghan & Rothery 1988; Christie & Martin 1997; Martin 1992) have been particularly influential both in school and tertiary settings. In the tertiary context, academic support teachers working inside disciplines and in adjunct programs have made available through close textual analysis descriptions of academic genres. Through modelling these descriptions are used as a means of scaffolding students' writing towards control of the genres they are required to produce in their courses of study (Drury 1991; Drury & Webb 1991; Woodward-Kron et al. 2000).

While genre research and its associated pedagogical practices have been influential, both the research and the explicit pedagogies have also met with hostility in Australia (Lee 1996; Lee et al. 1995) and overseas (Freadman 1994; Freedman 1994). The main criticisms of the genre-based approach are that it is considered to be decontextualised and prescriptive. Other significant issues in the 'genre debate' are the concept of genre, the validity of teaching disciplinary genres, and the notion of genre knowledge as empowering for disadvantaged students. Since this thesis takes

the view that genres play an important role in learning through writing, a more detailed examination of these criticisms is included in Chapter Two.

1.5   THE STATUS OF LANGUAGE IN TERTIARY LEARNING

There is little doubt that the role of language in tertiary learning has received increasing attention and recognition. Predominantly the attention and recognition are due to institutional concerns about students' literacy as well as industry expectations of graduate student communication skills (for example, Baldauf 1997; Higher Education Council 1992). Amongst language and literacy practitioners there is broad consensus that the student literacy problem is not one problem, but what Reid (1997) has described as "a knotty tangle of *several* large problems" (p.2). The changing student population and the implicit nature of many discursive practices are major contributing factors to the literacy problems of students. Institutional recognition of this knotty tangle of several large problems is evident in the literacy policies, programs and initiatives outlined in Baldauf (1997).

In disciplinary contexts, the move towards making explicit the underlying assumptions about valued writing practices has resulted in greater attention to the role of language in assignment writing. This greater attention does, however, raise important questions. Foremost amongst these questions is the type of assumptions and understandings about language which are reflected in subject outlines and assessment criteria. Are statements about valued writing practices little more than directives to pay attention to undefined concepts such as 'grammar', 'structure' and 'argument'? Is the role of language in constructing disciplinary knowledge understood or examined? Another question is whether students are given support in conceptualising the context that shapes many of the discursive practices in which they engage. Without adequately addressing these concerns, there is the danger that students' understanding of the role of language in disciplinary learning remains confused or unexamined. It may also result in students experiencing the discourse as prescriptive and restrictive. These questions are examined in depth in one institutional context in Chapter Four.

Thus far the main criticisms of academic discourse canvassed in this review are that the unfamiliar discursive practices of the disciplines can result in literacy problems, and that academic discourse can have a marginalising effect on non-mainstream students. Other criticisms relevant for this thesis focus on the relation of academic discourse to learning. Bourdieu and Passeron's (1990, 1994) research into the success of pedagogic communication in French universities has led them to argue that the language dimension of academic discourse functions not to illuminate or clarify but to disguise students' actual understanding. Professorial discourse is invariably described as "semantic fog" (for example, Bourdieu & Passeron 1990: 108), "destined to dazzle rather than enlighten" (Bourdieu & Passeron 1994: 3), resulting in students' linguistic misunderstandings. Like Bernstein (1990), Bourdieu and Passeron are concerned with the ways in which pedagogic communication reproduces social order in education and society. Bourdieu and Passeron regard the "semantic fog" as contributing to the reproduction of social order. While the research of Bourdieu and Passeron criticises the abstract dimension of academic language, it is not concerned to engage with the ways in which language construes abstract phenomena and provides the means through which relationships between such phenomena can be examined, explored, and so on. These issues are addressed in Chapters Five and Seven of this thesis.

1.6   THIS STUDY

The main motivation for this study is to inform the development of functionally oriented writing pedagogies to enhance the learning of a diverse student population. The above literature review has highlighted the growing institutional recognition of the importance of language, particularly writing, for successful tertiary study. Amongst researchers and language practitioners there is a growing awareness of the role language plays in constructing disciplinary knowledge, and at the institutional level policies and initiatives have been set in place in order to respond to the literacy needs of a diverse student population. In Australian universities there is a move towards language practitioners working together with subject specialists to make

available to students the valued epistemological and discursive practices of their disciplines.

In spite of these developments, the relation between disciplinary learning and language remains at best only partially understood. In the academic context research into student writing has tended to focus on a student's socialisation into a discipline's discourse community (for example, Berkenkotter et al. 1991; Casanave 1992; Faigley & Hansen 1985), and similarly, on students' growing awareness of the socially and rhetorically constructed nature of disciplinary knowledge (Haas 1994). Less emphasis has been placed on investigating the relation between students' development of disciplinary learning through writing, in which learning, and learning to write are not only viewed as social processes, but which also encompass the role of language in students' learning of disciplinary knowledge.

This study investigates students' writing development from the perspective of 'learning to mean' in a disciplinary context. It also investigates the learning processes occurring in students' disciplinary learning through writing. The investigation therefore has two convergent points of inquiry. The first area of inquiry is the social context which shapes and informs students' writing development. For this reason the study is located within one academic discipline and is a naturalistic study. The second area of inquiry is students' writing and the developments that occur as students' disciplinary knowledge increases. The study therefore has a longitudinal design.

1.6.1   Goals of the Study

The goals of the study are:

- to provide a better understanding of the ways in which university students learn specialist knowledge through language, particularly the written mode. The focus is on the writing of pre-service students in an Education faculty. The predominantly textual investigation is informed by a small amount of ethnographic data such as tutor and student interviews as well as documents

concerning students' writing in a faculty of Education. More specifically, the thesis aims to provide a comprehensive description of the range of language resources students draw on to realise learning processes in writing such as defining, classifying, reasoning, reporting and so on.

- to describe and map the changes which occur in students' writing as their disciplinary knowledge increases.

- to provide a better understanding of how students learn to write in a disciplinary context. This involves investigating the social context which influences and shapes students' learning. It also involves unpacking valued literacy practices such as critical analysis.

The longitudinal perspective and the naturalistic setting of the study should help clarify and extend current understandings of the role language, particularly in the written mode, plays in disciplinary learning.

1.6.2 Operational Definitions

Discourse and discursive practices:

While the terms language and literacy practices have been used in the preceding discussion of academic language, the terms discourse and discursive practices are used more frequently in the following chapters. 'Discourse' and 'discursive practices' imply a stronger sense of specific contexts and users. Since the term discourse is itself a contested one, a definition is necessary in order to make available the assumptions underlying the term's use in this study. The meanings associated with 'discourse' range in focus from inherently ideological (for example, Gee 1996; Kress 1985) to language in use (Wignell et al. 1993). As this study takes a primarily linguistic approach to learning, the study uses the term 'discourse' in a narrower sense to refer to the language used by groups of people who have shared knowledge, understandings and interests. Discursive practices are the social processes of constructing and disseminating knowledge in the form of written and spoken texts.

This particular definition has been adopted as this study is chiefly concerned with language, particularly in the written mode. While the study does take into account contextual influences, these influences inform the textual analysis and are not the major focus of the study.

Disciplinary discourses and the discourse of Education:

Academic disciplines are the schools of knowledge within the broad divisions of the humanities, sciences, and social sciences. In this study the term 'disciplinary discourse' refers to the ways in which members of a discipline construct meaning and share knowledge through language. The term 'the discourse of Education' refers broadly to the language used by researchers, practitioners and learners in Education, in which 'Education' is a discipline of study at university. It is acknowledged that 'Education' is not a homogeneous, monolithic discipline, rather a multi-disciplinary one that includes other disciplinary strands such as Sociology, Psychology, and the Philosophy of Education.

In the Australian context a major activity of Education faculties is teacher education. Pre-service teachers study for example theories of child development, sociology, pedagogy, as well as the curriculum key learning areas. As this thesis focusses on the writing of pre-service teachers, the position of this thesis is that the 'discourse of Education' is a super-ordinate term encompassing the range of discourses that inform teacher education. A feature of these discourses is that they have divergent origins and have been transferred and so recontextualised (Bernstein 1990) into an environment where teaching and learning is the focus. In addition to the discourse of Education this thesis makes reference to the 'discourse of child development and teaching and learning'. The purpose of this rather lengthy term is to distinguish between the super-ordinate term of the discourse of Education and make clear the disciplinary orientations of the first and third year texts, which are the focus of analysis and discussion in Chapter Seven. The 'teaching and learning' component of the term has been included in order to retain the focus on the applications of child development theories to classroom practice.

Learner genres

The term learner genres refers to the written texts students submit for assessment of their knowledge and understanding of subject content. They are referred to as learner genres as their function resides primarily in a teaching and learning context. While learner genres may share some characteristics of the genres utilised by the mature members of the discourse community, they are distinctive in that their social purpose includes a learning and monitoring dimension.

The term learner genre is also used to distinguish between the genres used by the mature members of a discourse community. In the discussion of academic discourse communities it was argued that vocationally oriented disciplines such as pre-service teacher education can be seen to include mature members who are academics as well as professionals outside the university, such as teachers. At this point of the thesis the term mature discourse of the discipline is retained, as deciding what constitutes the mature discourse of the discipline in which the pre-service teachers are learning and writing is one of the points of enquiry. The place of pre-service teachers in regards to a 'discourse community of Education' is likewise taken up in the chapter addressing contextual issues of pre-service teacher education, Chapter Four.

The term professional academic writing is also used to distinguish between the students' learning oriented writing in academic disciplines and the writing of academics in their role as researchers. Examples of professional academic writing are considered to be journal articles, conference papers, grant applications, reviews, and so on. These text types are also referred to in this thesis as professional genres of the academic discourse community.

Pedagogic discourse and disciplinary learning

The term pedagogic discourse was introduced earlier in this chapter in relation to Bernstein's sociology theory. In this thesis, the term pedagogic discourse has a more

linguistically oriented meaning that Bernstein's use of the term. In this study pedagogic discourse refers to the medium through which specialist knowledge is constructed and transmitted for the purposes of teaching and learning. As such this definition reflects the focus of this thesis on the linguistic dimension of learning and the ways in which specialist knowledge is selected, ordered and transmitted, particularly in written texts such as textbooks. The term pedagogic genres is used in this thesis to refer to text types which have a predominantly teaching and learning function. The most important example of a pedagogic genre in this study is the students' introductory textbook.

The term disciplinary learning is a broad term functioning to refer to learning which takes place in academic disciplines in the context of an educational institution such as a university.

Disciplinary learning processes

The term disciplinary learning processes is used to refer to processes which are significant for the students' own learning that are mediated through language, particularly in the written mode. In this thesis significant learning processes mediated through writing include defining, taxonomising (ordering), reasoning, and evaluating.

1.7   OUTLINE OF THESIS CHAPTERS

The focus of Chapter Two is the theoretical framework and methods for researching writing. The discussion commences with an overview of the systemic functional theory of language and elaborates on aspects of the theory which underpin this study. This chapter includes a discussion of other research paradigms for researching professional as well as student academic writing. The discussion includes an account of different theoretical perspectives on genre, discipline specific approaches to researching academic writing, as well as ethnographic ones. Since the thesis

investigates the role of writing in disciplinary learning, the chapter also reviews theories which approach learning from a linguistic perspective.

Chapter Three introduces in detail the design of the study and the description of the data. The discussion provides a rationale for the naturalistic setting of the study as well as describes the study, its longitudinal design and its integrated approach to researching student writing. Chapter Three also describes in greater depth the analytical tools from systemic functional theory which are used for the linguistic analysis of the students' assignments. This includes the language metafunctions and their grammatical systems, in particular the ideational metafunction and the system of transitivity. The discussion of the ideational metafunction includes an extended account of grammatical metaphor, abstraction and technicality as these concepts are particularly pertinent for the discussion in Chapter Seven.

Chapters Four and Five are concerned with investigating the ways in which students learn to write, and by extension, learn to mean in a disciplinary context. Chapter Four begins with a description of the disciplinary and institutional context in which the students are writing. This discussion is informed by interviews and questionnaires with students and tutors as well as subject guidelines and the Faculty handbook. The discussion focusses on how students learn to write in a disciplinary and institutional context. The discussion includes an evaluation of marker feedback on assignments and its role in socialising students into the discipline's discursive practices. Chapter Five explores the role of the pedagogic discourse in its written mode and to a limited extent for students learning through language.

Chapters Six and Seven focus in detail on the students' writing and the developments that occur as students' disciplinary knowledge increases. Chapter Six begins the linguistic analysis of the students' texts. The textual analysis in this chapter is a 'top down' approach, investigating the students' texts from the perspective of discourse structure, while in Chapter Seven the focus is on lexicogrammar. Chapter Seven is concerned with the ideational metafunction of language and focusses on the learning processes of defining, taxonomising (ordering), reasoning, reporting, and engaging

with disciplinary knowledge. Chapter Eight forms the conclusion to the thesis, and is concerned to draw together the findings from the contextual section of the thesis with the linguistic findings on learner genres and ideational meanings in the students' texts. Chapter Eight considers the implications of the overall findings and their pedagogical applications.

CHAPTER 2

FUNCTIONAL APPROACHES TO LANGUAGE AND LEARNING

This chapter outlines the theoretical framework of the study and the focus is the systemic functional model of language. The discussion covers aspects of systemic theory which are the means through which the questions informing this study will be addressed. These aspects include the functional and contextual dimensions of the systemic model, the view of language as a system of meaning potential and the model's tri-stratal organisation into semantics, lexicogrammar and phonetics or graphology. The discussion of systemic theory includes an account of genre theory, which has developed within systemics as an extension of register theory. Genre theory provides the point of departure for the linguistic analysis of the students' texts as it is the theoretical foundation for the investigation into the students' texts from the perspective of discourse structure.

This chapter also seeks to locate this study within current research in the areas of discipline specific discourses, research into tertiary student literacy and linguistic approaches to learning. The research cited is primarily of a functional orientation. That is, the research into language and learning is concerned with the way students learn through language, while the discipline specific research is concerned to investigate how language is used in specific disciplinary contexts.

The chapter first outlines the systemic functional model. Genre theory as developed by Martin (1992) and his colleagues is discussed within systemic theory so as not to disrupt the discussion of language and social context. The discussion of other approaches to genre which are significant for this study follows the discussion of systemic theory. The chapter closes with a discussion of relevant research in the

areas of linguistic approaches to learning and discipline specific research into academic discourses.

2.1 OVERVIEW: THE SYSTEMIC FUNCTIONAL MODEL OF LANGUAGE

The systemic functional of model as developed by Halliday (1985/1994) and colleagues provides the main theoretical framework for this study as well as the main linguistic tools of analysis. The choice of systemic functional linguistics is due to its being a model of language that views language as *"constitutive* of meaning and social context" (Veel 1997: 161, original emphasis). The functional dimension of systemic theory is twofold. First, it is concerned with language as a social semiotic and the way language is used to get things done in social contexts. Second, it is concerned with the way in which language is structured for use (Eggins 1994). This refers to the metafunctional organisation of language. Another underlying principle of systemic theory is that of choice, with language viewed as a system of meaning potential (Halliday 1978).

The following discussion of the systemic functional model of language elaborates on these aspects and relates them to the aims of the study.

2.1.1 Relating Language and Context

Systemic theory is concerned with the way language is used to get things done in social contexts. To understand the relation between language and context it is necessary to introduce two types of context which Halliday has theorised, following on from the work of the anthropologist Malinowski. Halliday refers to the immediate environment of communication as the context of situation, while the more general environment is referred to as the context of culture. The context of situation provides an environment in which acts of meaning can be exchanged and interpreted. For acts of meaning to be understood and for communication to occur, it is necessary for those who are participating in the exchange to be able to make informed guesses

about what kinds of meanings are likely to be exchanged. Halliday (1979; Halliday & Hasan 1985) argues that participants make predictions about the types of meanings that will be exchanged, and that we make predictions on the basis of the context of situation.

Just as any exchange of meanings or particular instances of language (texts) need to be interpreted within a context of situation, language itself is seen as a semiotic system within a cultural context. The relationship between the exchange of meanings (text) and context of situation, and the social system of culture is one of 'instantiation'. Matthiessen (1995) explains this relationship of instantiation as follows:

> A text in a context of situation is thus an instance of a language in a context of culture; it is a selection of features that covers some small part of the overall potential of language in context of culture. (p.38)

In order to characterise a text in relation to its social context, the conceptual frameworks of register and genre theory have been developed within systemic theory. As Eggins (1994) points out, register theory with its functional domains of field, tenor and mode provides a means to explore the relation of a text to its context of situation. Genre theory, on the other hand, has been developed within systemics by Martin (1992) and his colleagues in order to address the ways in which people use language to achieve culturally appropriate goals.

2.1.2   Field, Tenor, Mode and the Context of Situation

The social context of texts can be distinguished and interpreted through the register variables of field, tenor and mode. Halliday elaborates on these concepts as follows:

> 1.The FIELD OF DISCOURSE refers to what is happening, to the nature of the social action that is taking place: what is it that the participants are engaged in, in which the language figures as some essential component?

2. The TENOR OF DISCOURSE refers to who is taking part, to the
nature of the participants, their statuses and roles: what kinds of role
relationship obtain among the participants, including permanent and
temporary relationships of one kind or another, both the types of speech
role that they are taking on in the dialogue and the whole cluster of
socially significant relationships in which they are involved?

3. The MODE OF DISCOURSE refers to what part the language is
playing, what it is that the participants are expecting the language to do
for them in that situation: the symbolic organisation of the text, the
status that it has, and its function in the context, including the channel
(is it spoken or written or some combination of the two?) and also the
rhetorical mode, what is being achieved by the text in terms of such
categories as persuasive, expository, didactic, and the like.
(Halliday & Hasan 1985: 12)

Eggins suggests that in some ways "context is in text" (Eggins 1994: 7). The register
variables of field, tenor and mode provide a descriptive framework for characterising
the ways context is in text. In terms of learning and the context of situation, the
register variables provide an important 'way-in' for exploring how the pre-service
teachers in this study construe and interpret their educational context. The discourse
variable of field can provide insights into the extent to which the students relate the
specialist knowledge of the field to their own experience, and the extent to which
they construe disciplinary knowledge as abstract and 'uncommonsense'. The tenor of
discourse is a means of exploring how the students construe social relations in their
learning environment. For example, tenor relations can provide insights into whether
the students construe themselves as novices in the discipline or as informed
participants. The mode of discourse is a means of investigating the ways in which the
students construe learning in a written medium.

Halliday argues for a systematic correlation between the register variables and the
language metafunctions (Halliday & Hasan 1985). That is, the register variables of
field, tenor and mode are realised through language, where the constituents of
language are the semantic categories of experiential, interpersonal and textual
meanings. The field of discourse is expressed through the experiential resource, the
tenor through the interpersonal resource, and the mode is reflected in the textual.

This systematic correlation between the register variables and the language metafunctions is represented diagrammatically in Figure 2.1.

SITUATION: Feature of the context	(realised by)	TEXT: Functional component of semantic system
Field of discourse (what is going on)		Experiential meanings (transitivity, naming, etc.)
Tenor of discourse (who are taking part)		Interpersonal meanings (mood, modality, person, etc.)
Mode of discourse (role assigned to language)		Textual meanings (theme, information, cohesive relations)

Figure 2.1 Relation of the text to the context of situation (Halliday & Hasan 1985: 26)

An elaboration of the metafunctional resources of the system follows the discussion of genre theory and context of culture.

2.1.3   Genre and Context of Culture

Genre theory as developed by Jim Martin and other educational linguists in Australia (for example, Christie 1987; Kress 1982; Martin 1985, 1992; Martin et al. 1987; Rothery 1985) is an extension of register theory (in particular Halliday, 1978, 1985/1994). Genre theory was developed concurrently with a genre-based literacy pedagogy for primary schools, which was extended to secondary and adult education contexts as well as workplaces (for example, Callaghan & Rothery 1988; Derewianka 1990; Joyce 1992; NSW Department of School Education 1989, 1991, 1996). While register is concerned with the contextual variables of field (institutional activity), tenor (social interaction), and mode (medium of communication), genre theory differs in the emphasis it places on social purpose as a variable (Martin et al. 1987). Genres are defined as "staged, goal-oriented social processes" (for example, Martin 1998: 412), which are realised through the register variables of field, tenor

and mode. These in turn are realised through the semantic categories of experiential, interpersonal and textual meanings. This stratal relationship of genre to register to language (metafunctions) is shown in Figure 2.2.
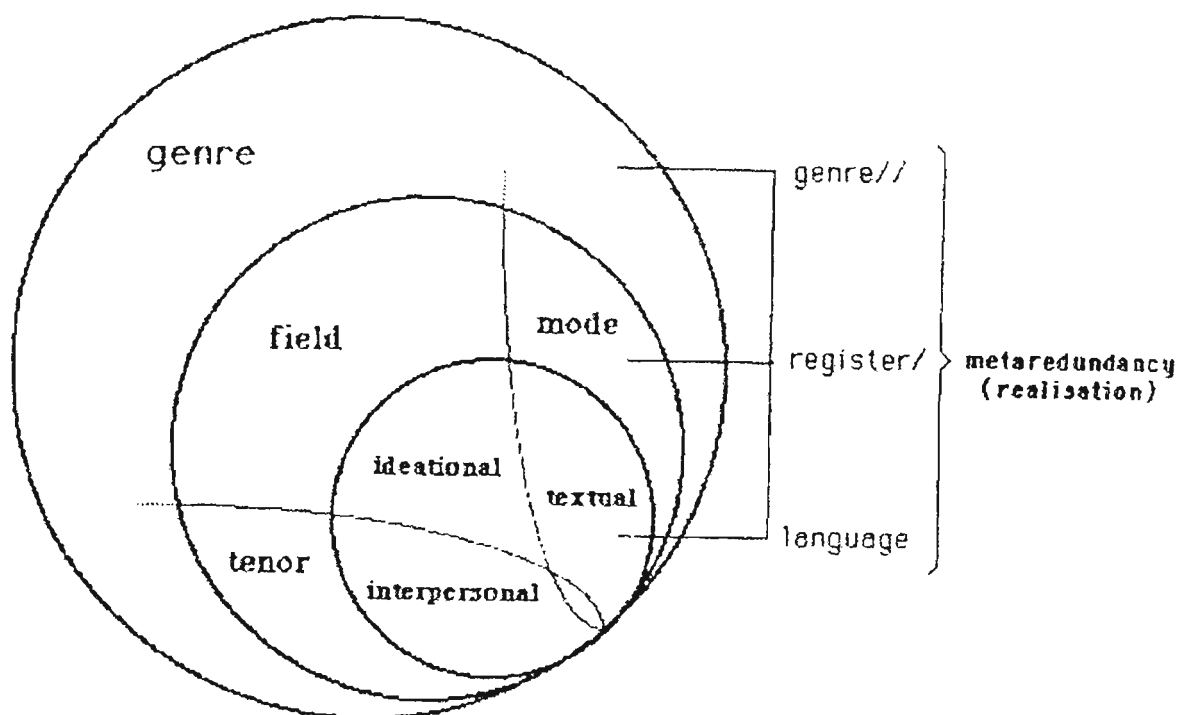
Figure 2.2 Language in relation to register and genre (Martin 1998: 413)

It is not uncommon in genre theory research to find text examples which come from the same field but which fulfill different social processes, for example a recount genre and an exposition (Martin et al. 1987). In providing this level of analysis, genre theorists argue that genres are not structures in which form and content are separated, rather both genre and field contribute meaning to a text. Detailed text analyses also highlight differences in linguistic choices between genres. Again, the focus is on how linguistic features such as nominalisation (Halliday 1994; Halliday & Martin 1993) contribute to meaning. In the case of nominalisation, in which processes are realised as nominals and thus treated as 'things' in the text, the result is a more abstract text distanced from the 'here and now' of the events described. Nominalisation is an important resource in interpretive writing; it allows the writer to repackage experience as 'things', and to organise textual development around the abstractions

(Martin et al. 1987). Genre theorists' attention to linguistic features such as nominalisation is particularly important in educational contexts, in which a student's control of a learner genre is a factor in educational success.

For this study genre theory is the main framework for meshing the linguistic dimension of learning with the social. In other words, genre theory's emphasis on the social purpose of texts turns any linguistic analysis back to in-depth considerations of social context. In this study a detailed description of the context in which the students' are writing informs the chapter on the role of genre in students' learning through writing. That is, the findings from the contextual chapter help to determine the social purpose of the students' written texts particularly from a learning perspective. Furthermore, the contextual framework of genre theory allows for consideration of the different contexts that influence the social purpose of the students' written genres, the educational setting and the influences of the discipline in which the students are writing. The contextual findings also provide a means of testing the view in genre theory that there is a systematic correlation between genre, context of situation and context of culture.

Genre research into the dominant text types in educational contexts informs the analysis of the students' written texts and assists in determining the text types the students are writing. Martin's (1992) point that Micro-genres can function as schematic stages in longer texts also provides a means of addressing the considerable variation in the schematic stages of the pre-service teachers' texts, as well as considering the function of the Micro-genres for the students' learning. The stratal organisation of the model provides an efficient analytical tool from which to investigate the students' writing development at different levels of complexity. That is, it facilitates an investigation of the differences between generic choices between lower scoring students and higher scoring students. It also makes possible this study's investigation into developments in the students' control of generic structure and realisation of register variables over the three year framework of the study.

The so-called "genre debate" (for example, Freedman & Medway 1994, Lee 1996, Reid 1987) has accompanied the development of genre theory and pedagogy. One issue in this debate is the position in genre theory that genre knowledge should be made explicitly available to students. That is, knowledge about the text structure and social purpose of unfamiliar genres would greatly assist students' writing, particularly the writing of educationally disadvantaged children (Martin 1985). Genre critics question the concept of distinct genres as well as argue that explicit teaching of genres is unnecessarily prescriptive, resulting in the stifling of creativity in writing (for example, Sawyer & Watson 1987). Explicit teaching about language is considered unnecessary as students are seen to acquire genres unconsciously by developing appropriate responses to the demands of particular writing tasks (Freedman 1987). In this study students are required to write in an unfamiliar genre in their third year of study. The findings from the students' writing in an unfamiliar genre provide a means of addressing the criticism in genre theory that the teaching of unfamiliar genres is unnecessary. Issues of genre pedagogy and writing are taken up in the concluding chapter of the thesis.

On a more general note, useful insights can be gained by exploring the relation between the professional and vocational genres of the discourse community, the associated pedagogic ones and the learner genres of the students. The differences between these genres' social purpose and the ways in which the genres construct knowledge can clarify the contextual influences on students' writing and the position of students in relation to the academic discourse community. In this study, the professional written genres of the academic discourse community include peer reviewed articles, reports, reviews, while the main written pedagogic genre is the students' textbooks. The ways in which the students' introductory textbook constructs disciplinary knowledge is discussed in Chapter Five, while the similarities and differences between the professional genres of the education academics' discourse community and their students' learner genres is addressed in Chapter Six. Moreover, in terms of the students' written learner genres, the institutional labels for these text types such as 'essay', do not make available to students the often implicit assumptions about the social purpose of the text, and the likewise implicit valuing of

various text types above others. For this reason functional labels have been adopted in this study to classify the students' learner genres. Finally, in a longitudinal study of disciplinary learning through writing, it is to be expected that there will be a shift in the types of writing or genres in which the students are required to participate (Veel & Coffin 1996). Such a shift may involve engaging students more directly in the production of disciplinary knowledge, a move which impacts on the generic and therefore lexicogrammatical choices in the students' writing (Veel 1997). These issues are investigated in the chapter on learner genres, Chapter Six.

2.1.4 A Metafunctional View of Language and Learning through Language

At this point it is necessary to elaborate in more detail on the metafunctional resources of the semantic system, and to relate the metafunctional view of language to the learning of specialist disciplinary knowledge.

Halliday (1979) describes the semantic system of language as being organised into systems which correspond to the functions that language has evolved to serve. These functional modes of meaning are referred to as ideational, interpersonal and textual.

The first of these, the ideational, is concerned with language as a representation of experience. It consists of two sub-components: the experiential and the logical. In the experiential domain, experience is represented, according to Halliday (1979), 'directly':

> ...we represent experience 'directly' in terms of happenings (actions, events, states, relations), entities that participate in these happenings (persons, animate objects, institutions, abstractions) and circumstantial features (extent, location, time and space, cause, manner and so on)... (p. 59)

The logical component is where experience is represented 'indirectly'. In other words, it is represented in terms of logical relations between phenomena, such as through contrast, addition, illustration and cause and effect.

The interpersonal dimension is language as interaction. It is language as interaction between speaker and listener or reader and writer. In the interpersonal dimension the semantic system expresses the interactant's "intrusion into the speech event" (Halliday 1979: 59) or exchange of meanings. That is, it expresses attitudes, judgments, demands, offers, and the interactants' roles in the meaning exchanges. The grammatical resources which realise interpersonal meanings are mainly the systems of mood and modality, and attitudinal lexis.

The third component is the textual metafunction. This organises the ideational and interpersonal components and structures the meanings as text. Halliday (1979) sums up the relation of the textual component to the other two components as follows:

> If the ideational component is language as reflection (the speaker as observer of reality), and the interpersonal component is language as action (the speaker as intruder in reality), the textual component is language as relevance (the speaker as relating to the portion of reality that constitutes the speech situation, the context within which meanings are being exchanged). (p. 60)

The grammatical systems which realise textual meanings are Theme/Rheme and Information. Theme is implicated in the way a clause is construed as a message, while the information unit is a structure made of up of New and Given information (Halliday 1994). Furthermore the systems of cohesion (reference, substitution, ellipsis, lexical cohesion and conjunction) contribute to a text's overall coherence.

The metafunctional perspective and corresponding grammatical systems provide an elaborate theoretical framework from which to explore these types of meanings in the students' texts, and by extension in their learning. Students entering the specialist worlds of disciplinary knowledge learn primarily about uncommonsense, abstract knowledge through language. From the ideational perspective, language is the means through which the disciplinary knowledge is named, defined, classified, and reasoned about, cause and effect relations are established, and so on. The ideational component is more than the specialised lexis of the discipline, but rather the lexicogrammatical patternings which organise and construe disciplinary knowledge. The interpersonal dimension of the students' learning in disciplinary contexts

involves negotiating the complex role relations of novice and authority, as well as engaging with disciplinary issues and debates. The students' engagement with disciplinary debates may take the form of assessing the validity of particular theories, and in the context of pre-service teacher education, evaluating theories of learning and child development to the classroom context. While students need to make evaluations and judgments, they are often at a loss how to do this while maintaining an objective and rational stance. The textual dimension of students' learning through language centres on writing. To be successful at university, students need to write texts which are coherent, concise and most importantly, develop logical arguments.

In this study the metafunctional perspective informs a number of aspects of the students' writing. In Chapter Four, the contextual chapter, the metafunctional perspective provides the framework for considering the types of commentary the participating tutors make on the students' assignments and in what ways this commentary attempts to socialise students towards the discursive practices of the discipline. In Chapter Five, the pedagogic discourse chapter, the experiential metafunction and its grammatical system of Transitivity inform the ways in which the textbook represents the field of child development. In Chapter Six, metafunctional perspectives are implicated in the discussion of students' written genres and the realisation of register variables in their texts. In the final textual analysis chapter exploring the students' lexicogrammatical choices, the focus is on the ideational metafunction. This chapter focusses on the ideational metafunction so that it can explore in detail the range of grammatical choices the students make to reason, define, classify, report knowledge claims and generally engage with disciplinary knowledge. The focus on the ideational metafunction also means that the concepts of abstraction and technicality can be addressed in sufficient depth. Equally detailed accounts of the interpersonal and textual meanings in the students' texts is outside the scope of this study, yet they remain important areas of further research that can extend the initial work of this study.

2.1.5   Relating Semantics and Lexicogrammar: A Stratified Model

A further principle of systemic theory is that of choice, with language viewed as meaning potential (Halliday 1978). As a semiotic system the model incorporates three levels or strata of language. These sub-systems are semantics, lexicogrammar and phonology or graphology. The discourse semantics (meanings) are realised through the lexicogrammar (wordings), which in turn is realised through the phonology or graphology (soundings or letters).

The semantic level is the resources of meanings available to the language user. Matthiessen (1992) states that texts are the basic semantic unit at the semantic level, and that the type of text depends on the context in which the text unfolds or is realised. In other words, the semantic level serves as an "interface between the grammatical resources and the contextual systems outside language" (Matthiessen 1992: 27). The notion of language as a semantic system provides an important tool for investigating the ways in which language is used in particular contexts. For this study, the tri-stratal organisation of the model and the relation between the different strata is particularly relevant, as many of the interpersonal, textual and experiential meanings in academic discourses are incongruently realised through the grammar. That is, the relationship between the grammar and the semantics is not a natural one. Verbs are realised as Participants rather than Processes in the clause, causal relations are realised inside the clause rather than between the clause in the form of conjunction, and so on.

Learning specialised disciplinary knowledge therefore generally involves a shift from congruent modes of expression towards more metaphorical, incongruent ones. The implications for this thesis are that any exploration of the students' developing capacity to mean in the disciplinary context, as well any shift from congruent modes of expression to more metaphorical modes involves a discussion of lexicogrammar as well as semantics.

The above discussion provides an overview of systemic functional theory and genre theory concentrating on aspects of the theories which relate to the goals of this study. While genre theory as developed by Martin and his colleagues provides the main theoretical framing and analytical tools for the discourse analysis component of this thesis, other approaches to genre in the field of academic writing have implications for the design of this study. These approaches are the focus of the next section. The remaining discussion is of applications of systemic theory to linguistic approaches to learning, and discipline specific research. This discussion includes an overview of the research areas, as well as locating the current study in these research directions.

2.2 SOCIO-CONSTRUCTIONIST APPROACHES TO ACADEMIC WRITING

A major focus of research into academic writing has been the identification of generic features of professional academic texts such as research articles (for example, Swales 1990) and pedagogic texts of the academy such as introductory textbooks (for example, Myers 1992). Much of the research has been pedagogically driven, particularly in English second language teaching contexts, as practitioners have made available descriptions of academic genres whose form and social purpose remained elusive to students (for example, Dudley-Evans 1994; Hewings 1993; Swales 1990).

Unlike genre theory outlined in the previous section, these approaches are not underpinned by an elaborate functional theory of language which systematically relates text and context. Instead the approaches to academic genres outlined below focus on the social dimensions of texts as communicative events and emphasise the socially and rhetorically constructed nature of these texts. For this reason these approaches are referred to in this thesis as socio-constructionist approaches.

2.2.1 The Swalesian Concept of Genre

In tertiary literacy research and teaching contexts, John Swales' writings on academic genres remain highly influential. His concept of genre is informed by

insights gained from the fields of folklore, rhetoric, applied linguistics, and literary studies. According to Swales (1990), a genre is a class of communicative events, "the members of which share some set of communicative purposes" (p.58). The communicative event is understood to comprise more than the discourse itself: it includes the participants, the context as well as the discourse's historical associations. Swales argues that examples of a genre will have similarities in structure, style, content and intended audience; however, he advocates caution when classifying genres or proscribing generic features. This caution is due to the belief that if analysts concentrate on distilling a genre's defining features, the complex network of related genres or of the genre's sets of communicative purposes could be overlooked. In his own analysis of a research process genre, the research article, Swales' textual analysis is preceded by a description of the phylogenesis of the research article. His textual analysis identifies the overall structural organisation of the genre, as well as identifying patterns within the various sections. These patterns are achieved by a series of moves which themselves are made up of a series of possible steps. Swales' description of the moves and steps reflects his concern with the genre's communicative purpose within the discourse community. For example:

Move 1   **Establishing a territory**

Step 1   Claiming centrality
            and/or

Step 2   Making topic generalization(s)
            and/or

Step 3   Reviewing items of previous research
                             (Swales 1990: 141)

His discussion of any lexico-grammatical features is similarly motivated. For example, Move 2, Establishing a [Research] Niche, is characterised by Swales as typically commencing with adversative conjunctions such as *however* and *nevertheless*, while research gaps are signalled lexically, for example: *suffer, limited to, time consuming, not sufficiently accurate* (1990: 154-155).

Swales' move analysis approach is relevant for this study as it makes available the types of social processes experienced members of academic discourse communities engage in when they write. Furthermore, his approach to genre serves as a useful reminder that it is beneficial to take into account other texts and participants involved in the communicative event of a genre. In other words, for this study it is useful to consider the students' written genres in conjunction with the assignment question, their tutors' responses to the students' assignments and so on.

2.2.2 A Socio-cognitive Perspective of Genre

Swales' description of the research article was informed by his own text-based analyses, published literature on textual features of research articles, and no doubt by his own insider knowledge as author and member of journal editorial boards. While Berkenkotter and Huckin (1995) share Swales' emphasis on the social dimension of genres, they regard overtly textual approaches to academic genres as engaging insufficiently in the ways in which the genre is embedded in the communicative activities of the discourse community. In Berkenkotter and Huckin's notion of genre, genre knowledge is seen as a form of situated cognition (Brown et al. 1989) embedded in disciplinary activities. Berkenkotter and Huckin place emphasis on their understanding of genres as dynamic rhetorical structures that can be manipulated, as well as emphasising that genres evolve in accordance with their users' socio-cognitive needs. Their investigations of the genres of academic cultures are informed by case studies that foreground individual writers' rhetorical strategies.

Both Swales and Berkenkotter and Huckin's concept of genre emerge from a long tradition of researching academic writing within the theoretical framework of rhetoric. For the present study, the socio-cognitive approach to genre and the Swalesian approach provide important insights for investigating interactions between

texts, participants, and the rhetorically motivated choices evident in discourse community members' writing.

2.3   A LINGUISTIC THEORY OF LEARNING

In applied linguistics there has been little research interest in the relation between academic writing and learning[1]. While there has been considerable research interest into the social dimension of learning to write at university, there has been less interest in investigating the ways in which university students learn specialist knowledge through language, particularly writing. In claiming little research interest in the area, it is not to say that academic writing researchers are not interested in the role of writing for learning, rather that the interest has tended to focus on the cognitive processes that occur when students write (for example, Flower & Hayes 1981). Bizzell (1982) refers to such researchers and their associated writing pedagogies as "inner directed theorists". Berkenkotter and Huckin's more recent research (1995) on academic genres argues both for the social and the cognitive dimensions of writing, arguing that knowledge about genre is a form of situated cognition embedded in disciplinary activities.

Hewings' (1999) suggestion that language research can be crudely divided into studies which highlight the social aspect of language learning, and those which focus on cognitive processes, that is, inner directed, is a useful orientation to research into language and learning. According to Hewings, this division can be broadly attributed to disciplinary differences: cognitive psychologists are concerned to investigate the cognitive dimensions of language and learning, while applied linguists focus on the more tangible evidence of text and context. Yet for understandings of the role of language in learning, valuable insights have been gained from crossing disciplinary boundaries. Vygotsky's (1962) pioneering work on the relation between language, social context and thinking processes has had particular resonance with educational linguists working within a systemic functional framework. In particular, Vygotsky's

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[1] One important exception is research that considers the role of pedagogic discourses in apprenticing students into the knowledge making practices of the disciplines. For a discussion, see Chapter One.

zone of proximal development and the concept of scaffolding have informed genre based writing pedagogies (Martin 1998; Martin et al. 1987) and research into children's language development from a functional perspective (Halliday 1975; Painter 1984, 1996).

In Halliday's and Painter's account of child language development, the emphasis is on how "children were learning *through* their language" (Halliday 1999: 70, original emphasis). Halliday refers to the process of learning through language as *construing experience*, a term also used by Britton (1972) to describe the way language is used by individuals as an organising principle to categorise experience. Drawing on his own 1975 case study data, Painter's data (1984, 1996) and Derewianka's study (1995), Halliday (1999) maps the development of young children's language and their meaning potential. He shows, for example, how children use language to construe experience by naming and classifying phenomena. He also shows the interpersonal dimension of learning through language, whereby children participate as learners using language to ask and give information as well as to negotiate meanings. Halliday's account of Painter's data, as well as Painter's own account (1996) emphasises the role of language as a resource for thinking and learning. Grammatical resources such as reporting processes (*the book says*), sensing processes *(I think, do you know?)*, identifying clauses to define, and internal causal conjunctions to reason are viewed as particularly important for educational learning.

Painter's (1996) account of the role of language in thinking and learning provided an important theoretical as well as analytical starting point for considering how the Education students were learning through language. Her case study of a pre-school child documented for example the ways in which the child used language to name phenomena. Painter argues that naming provides the child with an important resource for learning:

> It is one which enables the myriad distinct, individual instances of phenomenal experience to be generalised (under the guidance of others) as *categories* of experience. This is one aspect of building up everyday 'knowledge of the world', that is, of building a semiotic construction of experience. (Painter 1996: 54, original emphasis)

While the Education students were concerned to build up specialist knowledge rather than everyday knowledge, findings from a preliminary analysis of the students' texts in this study showed parallels with some of the grammatical construals in Painter's data. For example in the students' texts, identifying clauses function to name and classify specialist phenomena, while sensing processes and their corresponding nominalisations such as *I believe, this belief*, function as a means of reporting thinking processes. These grammatical construals as well as the semantic resources of elaboration and enhancement are discussed by Painter as a resource for learning. Her findings provide an important means for considering the ways in which these grammatical and semantic resources function as a resource for learning specialist knowledge through writing. The role of language as a resource for learning is a major theme of Chapter Seven.

Also of interest is Painter's discussion, after Martin (1992), of the broad distinction between fields of learning dependent on oral transmission, such as domestic and trade based fields, and fields of learning dependent on written language, such as the sciences, social sciences and humanities. Fields dependent on oral transmission are likely to make use of spoken, or more congruent grammar, while those relying on written texts would tend to make use of incongruent or metaphorical grammatical realisations (Martin 1992). This distinction, also referred to as a distinction between commonsense knowledge and uncommonsense institutionalised knowledge (Bernstein 1975), is a useful one when monitoring the relation of language to the development of specialised knowledge, as is the case with this study.

In the current study it can be expected that there will be a shift in the students' writing from congruent modes of expression to more metaphorical ones as the students engage with the specialist knowledge of the discipline. Indeed, moving from descriptions of everyday experience, realised through the congruent grammar of spoken language, into the uncommonsense incongruent language of the disciplinary discourse is a major inducting strategy in the students' introductory textbook (Woodward-Kron 2002).

The final study in this discussion of linguistic approaches to learning is Derewianka's (1995) account of one child's language development from childhood to adolescence, in particular the emergence of grammatical metaphor. Grammatical metaphor refers to the reconstrual of congruent meanings in the grammar into more metaphorical, incongruent grammatical categories. The relevance of Derewianka's research to the current study is her argument that certain uses of grammatical metaphor have significant implications for educational learning, an argument that is recurrent in systemic functional accounts of language in educational contexts (for example, Halliday 1998, 1999; Halliday & Martin 1993; Martin 1991, 1997; Veel 1998). Derewianka's distinction between technicality and abstraction is also particularly relevant for exploring the students' emerging control of disciplinary experiential meanings. The distinction between technicality and abstraction is addressed in detail in Chapter Three.

2.4   DISCIPLINE SPECIFIC APPROACHES TO ACADEMIC DISCOURSE

Another area that has received considerable research attention is discipline specific approaches to researching academic writing. Much of the research has been pedagogically driven. For example, in the American Writing across the Curriculum (WAC) teaching context, early investigations into the discursive practices of various disciplines were concerned to show that good writing across the disciplines was not monolithic (Faigley & Hansen 1985). Therefore, in order to teach writing effectively, writing instructors need to engage with the disciplines' specialist ways of making meaning (McCarthy 1987; Odell 1992). Researching discipline specific discourses and the pedagogical applications of the research is also a feature of the Australian context[1].

For the present study two related areas of discipline specific research provide important insights for the theoretical framing of this study and text analysis

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[1] Discipline specific approaches to teaching academic writing was the theme of a conference held at La Trobe University in Melbourne in 1994. See Chanock (1994).

procedures. One area is research into disciplinary pedagogic texts. This research has mapped discipline specific lexicogrammatical and discourse semantic features, for example in the disciplines of geology (Love 1991, 1993), geography (Humphrey 1996; Martin et al. 1991; Wignell et al. 1993), history (Coffin 1997; Martin 1995; NSW Department of School Education 1996), economics (Hewings 1990; Mason 1990); and scientific textbooks generally (Halliday & Martin 1993; Myers 1992; Veel 1997, 1998). For educational linguists working within the systemic functional framework, a primary function of specialist pedagogic discourses is to apprentice students into the ways of knowing of the discipline. Research examining textbooks from the fields of history (Coffin 1997; Martin 1991; Martin et al. 1991; Veel & Coffin 1996), science in general (Christie 1998; Veel 1997, 1998;), and geology (Love 1991, 1993) has detailed the ways in which the pedagogic discourses of these disciplines construct the experiential worlds of these fields. Of particular interest to this study is the exploration of the ways in which language is used to shunt students from commonsense views of the world to uncommonsense worlds of disciplinary knowledge (Halliday 1999; Halliday & Martin 1993; Martin et al. 1991).

The second pertinent area of discipline specific research is research that focusses on an aspect or aspects of academic discourse, and explores this aspect either in one discipline or through contrastive analysis across disciplines. Another approach is to explore differences between pedagogic texts and the mature texts of the discipline (Hyland 1994; Myers 1992). Examples of these research areas are explorations of modalisation (Ventola 1997), hedging (Hyland 1994) nominalisation (Martin 1991; Ventola 1996) and comparisons of written and spoken pedagogic texts across several disciplines (Young 1990). Relevant discipline specific research into student writing includes Hewings' exploration of disciplinary engagement in geography students' writing (1999). Her research was concerned to map the differences between first and third year students' engagement with disciplinary arguments. Her findings show that in the geography students' texts there was a shift in rhetorical focus from first to third year students. First year students were concerned to show an understanding of content, while the linguistic choices of the third year students showed more engagement with disciplinary argument highlighting evaluation and synthesis of

research. Hewings' methodology and findings, although focussed on the textual metafunction, are of significance for the present study which takes a longitudinal perspective of students' learning through language. While an examination of the textual metafunction itself is beyond the scope of the current study, Hewings' findings provide an important inter-disciplinary point of comparison for students' disciplinary learning through writing. Her research also provides important directions for future research for this study.

2.5 SUMMARY

This chapter has introduced systemic functional theory and genre theory which provide the main theoretical underpinnings for this study into the disciplinary learning through writing of a cohort of Education students. The discussion has focussed on the contextual and metafunctional dimensions of the model including the view of language as a system of meaning potential. The discussion included the applications of the systemic model to research into language and learning and academic discourse, as well as socio-constructionist approaches to academic genres.

The following chapter elaborates on aspects of systemic functional theory which provide the main analytical tools for the text analysis. It includes a description of the research design and argues for an integrated research framework drawing on text analysis as well as tools from ethnography such as interviews to address the research questions.

CHAPTER 3

RESEARCH DESIGN AND ANALYTICAL TOOLS

This chapter begins by describing the study's research design, its naturalistic research setting and longitudinal framework, and its integrated approach to researching students' learning through writing. The second part of the chapter revisits the metafunctional dimension of systemic theory in order to provide an overview of the ways in which experiential, interpersonal and textual meanings are typically realised in academic discourse. It also describes the linguistic tools and concepts drawn from systemic functional theory which are the main means of analysis for the students' written texts. A more detailed description of the analytical tools drawn from genre theory is provided in the chapter on learner genres, Chapter Six.

3.1 DESIGN OF THE STUDY

The present study aimed to identify and map the learning processes occurring in students' disciplinary learning through writing. In addition, the study investigated the students' writing development as they progressed in their undergraduate studies. The disciplinary context of the study was pre-service teacher education in a Faculty of Education at one Australian university.

The students who participated in the study were undergraduate students studying to become primary education teachers. The participants were recruited in a core first year subject, and the data were collected in a core strand of subjects over a three year period. The rationale for this approach was that the cohort would be more accessible in a core strand of subjects than in diverse elective subjects. In addition, the core strand of subjects was more likely to address similar themes and have a degree of continuity, which would not have been the case in any other combination of elective

subjects. This was considered a desirable feature for the investigation of the students' writing development. While no demographic data were available for the participants, lexicogrammatical choices in the students' texts suggested that all the participants in the study were fluent speakers of English. The surnames of a considerable proportion of the participants suggested, however, that they or their parents originated from non-English speaking backgrounds. Demographic data collected by the Faculty indicated that approximately a third of the undergraduate students enrolled in the Faculty at the time of the study were from lower socio-economic backgrounds.

The design of the study was an integrated research paradigm incorporating linguistic, discourse analytical, and naturalistic approaches to research academic writing in context. The main data for the study, the students' writing, formed part of the students' assessment for their degree program. To the best of the researcher's knowledge, the students who participated in the study received no additional institutional assistance or intervention in their writing development apart from advice and guidelines offered by their tutors. The students' tutors were also participants in the study. They were the main informants on issues ranging from contextual matters such as valued writing and learning practices to assessment procedures. The tutors' cooperation also made the collection of the data possible.

3.1.1   The Naturalistic Research Setting

The aim of naturalistic research is to understand the influence of the physical and social context on the persons involved in the research's behaviour, perceptions and practices (Smith & Glass 1987). Naturalistic research settings can provide rich, contextually situated data which are the main means of informing understandings of human behaviour and interactions within a particular culture or context. The current study was a naturalistic study as it involved the long-term study of primary teacher education students' writing in the context of one Faculty of Education. The researcher interacted with the participants in the research primarily through interviews and collected the students' written texts submitted for assessment as well as Faculty documents concerning students' writing.

One drawback to naturalistic studies is that the naturalistic researcher has little control over a number of variables. Significant areas of concern for a longitudinal study such as this one were student attrition and the extent and duration of tutor and student participation in the study. Since the research goals were to map the ways the students learned disciplinary knowledge through writing as well as to investigate the students' writing development, it was necessary to select the texts of students who had completed three years of study. This meant the final cohort could not be determined until mid year of the third year of study. For this reason a fairly large cohort was initially established in order to insure against student attrition. Another consideration was the guidelines of the university's Human Research Ethics Committee. Two Ethics Committee stipulations for this project were the need to ensure that there was no coercion involved in establishing the student cohort, and to ensure anonymity for the participating students and tutors. A copy of the consent letter approved by the Ethics Committee as well as the Ethics Committee approval letter is included in the Appendix (Appendix A). The success of the collection of the students' assignments hinged on the tutors' cooperation and their making available the marked assignments for collection. Identifying information such as the students' and tutors' names and subject codes has not been included in the description of the data in accordance with ethics guidelines. The anonymity requirement also meant that tutors could not provide their perceptions of the writing development of individual students.

Another variable over which the researcher had little control in this study was marker discrepancy. This was an important consideration since the grade awarded was used as one of the selection criteria for the student assignment corpus. In this study extended exposure to the marker commentary and grades awarded by four of the participating tutors resulted in the researcher's awareness of a degree of marker discrepancy. For example, two of the tutors appeared to have a low tolerance level for students' surface level errors of punctuation and spelling, whereas another marker appeared to be more tolerant of these kinds of infelicities. This marker discrepancy was counterbalanced by selecting texts that had been marked by different tutors.

In naturalistic research settings there are also numerous overlapping contexts which need to be taken into account. When considering the ways in which students' learn specialist knowledge, there are a number of learning contexts and discourses which the students experience. For example, students studying to be primary school teachers experience a range of educational discourses including child psychology, curriculum development, science and technology, and physical education. Another important dimension of primary teacher education is the students' practicum. In other words, an important part of students' learning the specialist discourse of education is the ways in which students use oral language in the classroom. In order to focus on the developmental aspect of the students' learning through writing and to provide some continuity, it was necessary to restrict the number of contexts which needed to be taken into consideration. For this reason the students' texts were only collected in the Education foundation subjects, which extended over the three years of the degree.

One important advantage of a naturalistic study, however, is that the researcher can respond to unexpected events and findings. The researcher can reformulate research questions, or investigate particular aspects in more depth without having to greatly modify the research design. Furthermore, the richness and variety of data available in naturalistic research settings are an important means of addressing questions of validity. Analytical practices such as triangulation of the data mean that findings can be cross-checked by drawing on other perspectives. Triangulation of the data as a research practice provides credibility and validity to qualitative analyses, which by their nature include an element of interpretive judgments. The richness and contextually situated nature of the data provided by the naturalistic setting was the main means through which a detailed description of the study's immediate context became possible. These descriptions were an essential component of the study as they informed and guided the linguistic analysis of the students' texts. The interviews with students and tutors provided a means with which to compare perceptions of valued discursive practices in the faculty as well as to compare understandings of general concepts such as critical analysis.

3.1.2 The Longitudinal Framework

The longitudinal aspect of the research design allowed the tracing of significant developments in the students' writing over an extended period of time. Texts were collected at yearly intervals with the data collection commencing at the beginning of the students' university studies and finishing towards the completion of their studies. In other words, the texts collected span the duration of the students' undergraduate degree from novice student to threshold level practitioner as a pre-service teacher. The longitudinal framework of this study was therefore intended as a means to provide a comprehensive description of students' initial textualisations as well as their final attempts. The longitudinal dimension of the study was not designed around several case studies, but aimed to provide breadth of description by drawing on a more substantial cohort in order to have a wider spectrum of grades as well as to counteract any marker discrepancies. For this reason the analysis did not track and compare the writing developments of individual students, rather the students' writing was compared by grouping the students into the classifications, 'lower scoring students' and 'higher scoring students'. These classifications are elaborated on in Chapters Six and Seven.

In the analysis of lexicogrammatical choices in the students' texts the focus was narrowed to a smaller cohort of students in order to focus in more detail on particular linguistic features and their implications for development in the students' meaning potential. While much of the linguistic analysis is qualitative, quantitative analysis features in a number of sections in the thesis, particularly when the discussion focusses on particular linguistic features such as abstraction and technicality.

3.1.3 An Integrated Research Paradigm

While the predominant analytical tool for this study was text analysis, the study drew on an integrated research paradigm. In research into student writing, text analytical approaches have been combined with ethnographic or sociological research to investigate the assumptions that inform tutors' approaches to student writing (for

example, Hewings 1999; Hyland 2000; Lea & Street 1999). The data in such approaches include documents concerning assignment writing, interviews and questionnaires conducted with tutors and students. According to Candlin (1998a), an integrated research paradigm incorporating linguistic, discourse analytical and ethnographic approaches is both valuable and able to be replicated. Hyland (2000) too advocates a combination of textual and ethnographic approaches, which he refers to as a 'social' approach to researching academic writing. Hyland argues that such an approach should draw on representative texts such as journal articles and interview data from disciplinary informants. The inclusion of ethnographic data such as student interviews can provide important insights into students' framing of academic discourse (Ivanic 1997; Plum & Candlin 2002), as well as show disjunctions between students' understandings and lecturers' expectations (Candlin 1998b; Hyland 2000).

In this study student and tutor interviews as well as documents concerned with student writing supplemented and informed the predominantly textual investigation into disciplinary learning through writing. The ethnographic data was of most importance to the first strand of inquiry in the thesis: the social context that shaped and informed the students' writing development. The discourse analytical and linguistic approaches informed the remainder of the thesis.

3.2   THE DATA

The study tracked the writing development of sixteen primary teacher education students and the ways in which these students learnt through their writing. The main data for the study were the students' assignments collected over a three year period in a core strand of subjects, that is, Education 1 (Child Growth and Development), Education II (Sociology of Education), and Education III (Thinking and Learning). Assignment collection commenced in March 1999 and was completed in June 2001. The assignment data were supplemented by other contextual data. These data were the students' introductory textbook, interviews with students conducted in the first and third year of the students' studies, as well as departmental documents such as subject outlines and the Faculty Handbook. The selection of the students' texts was

determined in part by the students' participation in individual interviews, the need to collect assignments from a range of grades and the need to examine texts that had been marked by different tutors. The core cohort of sixteen was reduced to fourteen students in the second and third year of the study due to student attrition. The two students who discontinued mainstream studies were maintained as part of the cohort as they had participated in interviews in the first year of the study. Fifty-eight texts form the main corpus for this project. In Chapter Six, Learner Genres and Generic Choices, the analysis and discussion draws on the entire main corpus, whereas in the following chapter, the analysis and discussion focusses in more detail on a smaller number of students and their texts. The precise number of texts selected for discussion is given in the relevant chapters. Table 3.1 shows the date the assignments were collected, the number of assignments collected, and the type of written assignment collected from the core cohort of sixteen. The grading scale used by the Faculty and referred to in the table is: Pass = 50% - 64% (P); Credit = 65% - 74% (C); Distinction = 75% - 84% (D); High Distinction = 85% - 100% (HD).

Table 3.1 Cohort for textual data and grades awarded

	March 1999 essay	October 2000 essay	4/2001 journal article review	June 2001 essay
Student 1*+	P+	Withdrew from studies		
Student 2	D	HD	C	D
Student 3	C+	C-	P	C+
Student 4+	HD	HD	D	HD
Student 5	C	C+	P-	P+
Student 6+	D	C+	HD	HD
Student 7*+	HD	Changed into the KBC[1] stream		
Student 8	C	F	P-	C-
Student 9+	D-	C+	D	HD
Student 10	D	D	D+	HD
Student 11	P	C	P-	C
Student 12	P	C-	P	C-
Student 13+	HD	D	C	C-
Student 14+	P+	C+	C	D-
Student 15	D	D	HD	D
Student 16	C-	C+	P	C

* withdrew from university studies or mainstream education studies
+ these students were interviewed in either the first and/or third year of the study.

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[1] Knowledge Based Community. This is an alternative degree pathway for the Bachelor of Teaching offered by the Faculty based on the principles of problem based learning. See Kiggins (2001).

The students written texts were sorted chronologically and word-processed, and the students' grades recorded. Since the corpus consisted of fifty-eight assignments of approximately 2000 words, the initial procedural plan was to use a software package for the linguistic analysis. In the field of systemic functional linguistics there are several programs available to assist with the analysis of texts. These include O'Donnell's (HTTP) *Systemic Coder*, Matthiessen and Wu's (HTTP) *SysFan*, and Judd and O'Halloran's (HTTP) *Systemics*. The opportunity became available for the researcher to trial a beta version of Judd and O'Halloran's *Systemics*, and transitivity analysis of ten texts was partially completed before the licence of the beta product expired. Due to technical difficulties the release date for the final version was delayed to April 2002. Once it became clear that *Systemics* would not be available in sufficient time for this project to be completed, it was considered too late for the learning of an alternative software package such as the *Systemic Coder*. While a software package would have greatly assisted the collation and presentation of the analysis, word processing software was the main means of analysing and storing the linguistic analysis.

The sixteen students whose texts form the main corpus were part of a larger cohort of students whose assignments were also collected and which were used to confirm some of the findings from the main corpus. Table 3.2 shows the total amount of written assignments collected over the three year period. These texts as well as the interview transcripts are held in a secure location in the Faculty and are available for viewing.

Table 3.2 Total of written assignments collected from 1999-2001

	03/99 Essay 1	06/99 Essay 2	10/00 Essay	04/01 Journal article review	06/01 Essay
Total	46	46	29	32	32

While approximately sixty students were recruited for the study in compliance with Human Ethics Committee guidelines, the reduction in participant numbers was due to student attrition and logistical problems in collecting the students' assignments. For example in the second year of the study a participating tutor was replaced in a

subject with a tutor who did not wish to participate in the study. This resulted in the non-collection of a group of student assignments, as contact with the students through other means would not have been in compliance with the Ethics Committee guidelines. Not all assignments written by the students in the three subjects were collected as some of the assignments were group projects, a feature which did not allow for the tracing of individual students' writing development.

The students' assignments and their introductory textbook formed the linguistic component of the study. The textual data were supplemented with interview data conducted with several of the participating students' tutors as well as with brief questionnaires completed by some of the tutors teaching in the targeted subjects. In this thesis the term 'tutor' is used to refer to the students' teachers who conducted the students' tutorial groups. These tutors also marked the students' assignments. In other words the term 'tutor' does not denote the participating academics' academic level (that is, tutor, lecturer, senior lecturer etc.), rather it denotes their function in regard to the tutorials. All the participating tutors lectured in the targeted subjects. A more detailed description of the tutors' background is provided in Chapter Four. As Table 3.3 shows, there was some continuity in tutors over the three years of the study. This table shows the number of tutors who participated in interviews or questionnaires and when these interactions took place.

Table 3.3 Tutor interview and questionnaire data

Participating tutors	1999	2000	2001
Tutor 1	questionnaire/ interview	interview	
Tutor 2		interview	
Tutor 3		interview	interview
Tutor 4			interview
Tutor 5	questionnaire/ interview		interview
Tutor 6	questionnaire/ interview		

The purpose of the tutor interviews and questionnaires was mainly to determine the types of writing practices the tutors valued, and to examine the tutors' perceptions of the role of writing in the students' learning. These data provided contextual information for the study, as well as focus points for the linguistic analysis of the students' texts. The interviews also sought to investigate whether the tutors provided

any scaffolding or modelling for the written assignment tasks. The interviews were taped and transcribed so that the researcher could more fully concentrate on the participants' responses and engage with those responses. The transcription conventions used are adopted from Eggins (2000) and are given prior to the first transcript excerpt in Chapter Four.

The interviews were informal and structured around focus questions. The focus questions and semi-structured nature of the interviews were seen as necessary in order to probe informant responses further. The design of the interviews was informed by ethnographic research into academic writing, in particular, the discussion of institutional documents in case study research (Lea & Street 1999) and discipline specific based interviews (Hewings 1999; Plum 1998). Discourse-based interviews, in which the researcher and informant focus on aspects of students' texts (Ivanic 1997) would no doubt have provided additional insights into valued practices in the students' writing. However, this approach was not logistically feasible due to the timing of the interviews and the collection of the students' assignments. This approach remains one possible area of future investigation.

Individual interviews were also conducted with a number of students in the first year and third year of the study. These students were identified in Table 3.1. Establishing an adequately sized interview cohort from the main cohort of students presented a challenge to the researcher. While the collection of the written texts required no involvement from the students apart from giving their consent for collection of their texts, interviews could be considered time intensive, inconvenient and potentially intrusive. Furthermore, the researcher was unknown to the students. As a result it was only possible to establish a cohort of seven students to be interviewed. In the third year contact could only be made with three of these seven students. Two of these interviews were conducted via email.

While email correspondence is a less spontaneous and open-ended format than a loosely structured interview, the advantages of computer mediated communication compared to face-to-face communication in qualitative research settings are

considerable (Mann & Stewart 2000). For example, computer mediated communication enables access to geographically isolated participants, is convenient for the participant and researcher, and it allows the respondent more time. Furthermore, email interviews allow the researcher to further explore or clarify issues raised in an initial exchange of emails. The design of the interview format was particularly informed by Plum's (1998) research into the ways in which undergraduate psychology students frame academic writing in response to the writing demands made on them explicitly and implicitly by their teachers and by the discipline. The interview questions and excerpts from the interviews are included in Chapter Four.

More detailed descriptions of the interviews and other methodological considerations are provided in the following chapter on the disciplinary context. Similarly, more detailed descriptions of the analytical procedures for the linguistic component of this thesis are provided in Chapters Five, Six and Seven.

3.3. ANALYTICAL TOOLS

In the description of systemic theory in the previous chapter two main themes were i) the contextual dimension of the model and its stratal relationship of genre to register to language, and ii) the ways in which language is structured metafunctionally for use. In the description of the analytical tools, the focus is the language metafunctions and their corresponding grammatical systems. The description of the analytical framework for genre and register is included in a later chapter focussing on genre (Chapter Six). The description of the lexicogrammatical resources is framed within a discussion of the lexicogrammatical features of academic discourse, and is thus restricted to those features which contribute to the distinctiveness of academic writing. At this point of the discussion the description of the lexicogrammatical features of academic discourse is limited to a generalist account of the features of academic discourse rather than a more specific account of the features of a particular disciplinary discourse. This is because the function of this section is to introduce the language metafunctions and their corresponding grammatical systems and to provide

an overview of academic discourse in these terms. Since a major focus of the thesis is ideational meanings, its grammatical systems are considered in more depth than those of the interpersonal and textual metafunctions. A brief description of the interpersonal and textual metafunctions is included, as the linguistic choices occuring in the ideational realm of the texts often have implications for textual and interpersonal meanings.

The description of the analytical tools focusses on the language metafunctions and their grammatical systems, metaphor and the concepts of abstraction and technicality. These aspects of systemic theory inform the textual analysis in Chapters Five (The Pedagogic Discourse), Six (Learner Genres) and Seven (The Ideational Dimension) as well as a sub-section of Chapter Four on marker commentary. While the description of these concepts involves a discussion of issues in the theory and areas of difficulty in applying the concepts to the student texts, discussions of analytical problems which are specific to the concerns of a particular chapter are included within the context of that chapter.

3.3.1 The Language Metafunctions and their Grammatical Systems

The ideational metafunction consists of two sub-components, the experiential and the logical. The experiential component, the representational function of language, is realised by the grammatical system of TRANSITIVITY[1]. Within this system, the clause construes experience through a set of process types representing both the happenings and relations in the external world, as well as the processes of inner consciousness (Halliday 1994). A process consists of the process element itself (the happenings, relations, reactions etc.), the participants in the process (persons, places, concrete and abstract things), and circumstances associated with the process (cause, extent, role, angle, manner, location in time and space, and so on).

---

[1] In systemic theory upper case letters distinguish the grammatical systems. Upper case letters are used in this thesis only to introduce the grammatical systems.

Academic discourse is often concerned with abstract entities or things and the relations between those entities. Grammatically, this means that the participants in a text are frequently abstractions, such as *competence* or *intelligence*. As nominal groups, the abstractions have the potential to expand to include pre- and post-modifying information, which can classify, describe, enumerate, locate in time and space, and so on. For example:

learning[1]
social learning
social learning theory
Vygotsky's social learning theory
the implications of Vygotsky's social learning theory
the implications for the classroom of Vygotsky's social learning theory

Jones (1988) points out that in academic writing much of the complexity is built up in the nominal group, whose structure can include a head noun with premodifying and /or postmodifying information consisting of embedded clauses and phrases which can consist of further nominal groups. Embedding, also known as rankshift or downranking, is when one unit has been embedded inside another, for example, when a clause is embedded in another clause (Martin et al. 1997). Embedded finite or non-finite clauses are signified in the analysis by double square brackets [[ ]]. An example of a group with rankshifted elements is given below[2].

the child's	attempt	[[to understand the world]]	
Premodifier	Head	Postmodifier	
		Process	Thing

In addition to embedding, the 'packing-in' of information in the nominal group is achieved through the resource of complexing. Complexing can occur at all ranks in the grammar. At group rank, complexing is the combination of words linked by a logical relation: for example, *learning came about through the child's attempts to*

---

[1] In this example of expansion in the nominal group there is a shift from 'learning' as the Head of the nominal group to 'theory'. This is due to the fact that it is an example from the data rather than a 'made up' one.

[2] For a discussion of embedded clauses as head of a nominal group see Chapter Seven.

understand the world, and their individual attempts to either assimilate or accommodate the information. In this example, there are two nominal groups (with embedding) connected by 'and' which together form a nominal group complex. The second nominal group (*their individual attempts to either assimilate or accommodate the information*) expands the first nominal group. It also contains a verbal complex as part of the embedded clause. As this example shows, both embedding and complexing function to increase the information which can be included in a nominal group. From an analytical perspective, the resources of embedding and complexing are a useful means of investigating the ways in which the students build up meanings in their writing.

The logical component of the ideational metafunction is to do with the types of logical relations between clause complexes and between group complexes. For example the type of logical relation between the following clause complex is one of dependency:

α → β

Piaget argued   that learning came about through the child's individual attempts to either assimilate or accommodate information.
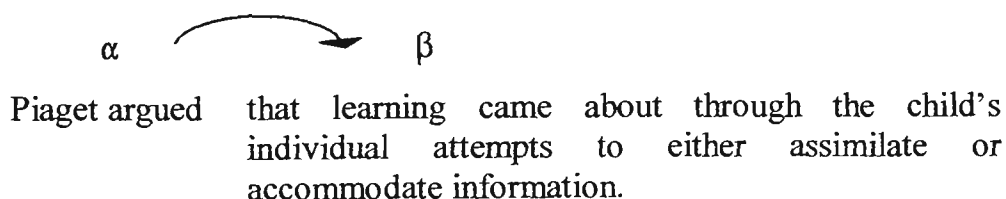
Here a verbal process (*Piaget argued*) projects what Piaget argued about how children's learning takes place. It is worth noting at this stage that projecting processes such as *Piaget argued* play a major role in the students' texts, as they are the main means through which the students report the knowledge claims of theorists or authorities in the field. These reporting processes also appear to play an important discourse-organisational role in the students' texts, an issue which is taken up in Chapter Six. It is also worth noting the differences in rank in the grammar between the above clause complex and the following nominal group. Through the process of nominalisation, the projecting process has been reconstrued as a Thing in the nominal group, and the projected process reconstrued as an embedded clause functioning as Qualifier:

Piaget's	argument	that learning comes about through the child's individual attempts to assimilate or accommodate information
Deictic	Thing	Qualifier

While the meaning in the clause complex is roughly equivalent to the meaning in the nominal group, in this second example the meaning functions at a lower rank in the grammar – at the rank of group or phrase, instead of at the clause rank (Halliday & Martin 1993). Halliday and Martin (ibid) point out that this reconstrual has tremendous implications for the "texture of the discourse" (p.39). Interpersonally, the nominal group is less negotiable than the clause complex. While it is possible to challenge that Piaget did in fact argue how learning comes about, the construal of *'Piaget's argument'* as a thing makes the act of his arguing less open to challenge. In terms of textual development, however, the nominalisation of the projecting process opens up possibilities for distributing information in the clause (ibid). For example, *'Piaget's argument that learning...'* can be the point of departure for the clause (Theme), or be in the New position. Experientially, the nominal group *'Piaget's argument that learning...'* can function as a Participant in a range of relational processes, thereby expanding the meaning potential of the clause. For example:

[to contrast]
Piaget's argument that learning comes about through the child's individual attempts to assimilate or accommodate information **contrasts with** Vygotsky's view that social interactions are crucial for development.

[to explain/to show causation]
Piaget's argument that learning comes about through the child's individual attempts to assimilate or accommodate information **has resulted in** the development of teaching strategies to promote autonomous thinking.

[to identify]
Piaget's argument that learning comes about through the child's individual attempts to assimilate or accommodate information **is** one of the most influential theories in child development.

[to evaluate]
Piaget's argument that learning comes about through the child's individual attempts to assimilate or accommodate information **is convincing**.

[to describe qualities]
Piaget's argument that learning comes about through the child's individual attempts to assimilate or accommodate information **has** implications for the classroom.

Projecting mental and verbal processes reconstrued metaphorically as participants in relational clauses are a distinctive feature of the experiential choices in the students' writing.

The interpersonal component of language is language as social interaction, and is to do with the establishment and maintenance of social relations between interactants, that is, in the case of this study, between writers and their audiences. The lexicogrammatical resources which enable the maintenance of social relations through language are the systems of MOOD, MODALITY, and POLARITY.

In terms of interpersonal meaning, professional academic discourse can be described as formal, objective and impersonal. The formal aspect can be attributed to the relationship between writer and reader as one specialist to another. The objective and impersonal dimension can be attributed to the apparent 'fact-like' way knowledge is reported. Emphasis on the objective and impersonal dimension of academic discourse suggests that academic discourse is concerned only with facts and uncovering truths. However, the rhetorical purpose of much academic writing is to persuade the reader of the writer's proposition(s). Propositions or arguments are mostly aimed at the intellect rather than our emotions. According to Latour and Woolgar (1979) writing on the language of persuasion in science,

> the result of the *construction* of a fact is that it appears unconstructed by anyone; the result of rhetorical *persuasion* in the agnostic field is that participants are convinced that they have not been convinced. (p.240)

Therefore explicit expressions of the writer's feelings and opinions tend to be absent. Evaluations tend to be realised by adjectives inside nominal groups (e.g. *another important aspect*) or through nominalisations (e.g. *the importance; the benefits*). The writer's stance towards the proposition he or she presents tends not to be expressed through a personal pronoun and process of thinking, feeling etc. (e.g. *I think, I believe)*, but through more impersonal constructions such as, *it is therefore essential; it seems*. Another interpersonal feature of academic discourse is low modality. Modality refers to the intermediate choices between *yes* and *no*, such as *might, could, may* etc (Halliday 1994). Modality is used in academic discourse to negotiate claims, particularly when evaluating results or stating implications. Modality is also a feature of recommendations in academic discourse. For example, *teachers must consider* expresses strong obligation and high modality, whereas in *teachers should consider* the modality has been adjusted to express mid range obligation.

The textual metafunction organises the ideational and interpersonal components and structures the meanings as text. The systems of THEME and INFORMATION allow the writer to organise information in the clause as well as contribute to the cohesive development of the text (Eggins 1994). The resource of COHESION enables the establishment of relations above the clause. Textual features of academic discourse include logical progression in paragraph structure and conjunction to express the logical relations between ideas in the text as well as the text's rhetorical structure (Drury & Gollin 1986). Another textual aspect of written academic discourse is the tendency for clauses to contain a high number of content words (Ventola 1996). This is in contrast to spoken language, which tends to be grammatically intricate, particularly in clause structure and combinations, and to have fewer content words per clause (Halliday 1985).

3.3.2 Grammatical Metaphor

As the discussion of the experiential, interpersonal and textual features of academic discourse has highlighted, many of these meanings in academic discourse are

incongruently realised through the grammar. That is, the meanings are abstract, uncommonsense ones rather than commonsense, everyday meanings realised congruently. Learning specialised disciplinary knowledge therefore involves a shift from congruent modes of expression to more metaphorical, incongruent ones.

In systemic theory the reconstrual of congruent meanings in the grammar into more metaphorical, incongruent grammatical categories is referred to as grammatical metaphor. This reconstrual enables, for example, the naming of processes so that the processes as things can be related to each other in the environment of the clause. As was argued in the previous section on experiential meanings, grammatical metaphor has important implications for text organisation and the way information is distributed in the clause. Processes packaged grammatically as things can function as the point of the departure of the clause, or Theme, and carry the argument forward as part of the Theme and Information structure (Halliday 1998). Educational linguists have argued convincingly that the presence of grammatical metaphor in students' writing is a key component in educational success at the secondary level (Derewianka 1995; Halliday & Martin 1993; Martin 1991; NSW Department of School Education 1996), and at university (Drury 1991; Jones 1988; Ravelli 2000; Schleppergrell 2001).

3.3.2.1   Types of Grammatical Metaphor

Grammatical metaphor is a dynamic, evolving area of systemic theory, and as a result, there are different interpretations of grammatical metaphor in the literature, particularly in terms of types of grammatical metaphor and degrees of metaphoricity (Derewianka 1995; Martin 1992, 1997; Taverniers 2000). For example, Halliday (1994) refers to ideational and interpersonal metaphor, while Martin (1992) distinguishes between experiential, logical, interpersonal and textual metaphor. Martin has also proposed the category of contextual metaphor (Martin 1997). As these theoretical concerns are beyond the scope of this thesis, the discussion of grammatical metaphor is restricted to providing an overview of experiential grammatical metaphor, as it is the most significant for the purposes of this study.

Thus far, examples of experiential grammatical metaphor provided in the discussion have been restricted to processes or qualities reconstrued as a kind of entity or thing, such as the example shown in Figure 3.1.

SEMANTICS   LEXICOGRAMMAR

Piaget   *viewed*   *children*   *as active seekers of knowledge*

mental   Senser   Pro: Phenom.   Circumstance
process

            nominal   verbal   nominal   adverbial group
            group   group   group

thing   *Piaget's*   *view*
            Deictic   Thing
            nominal group
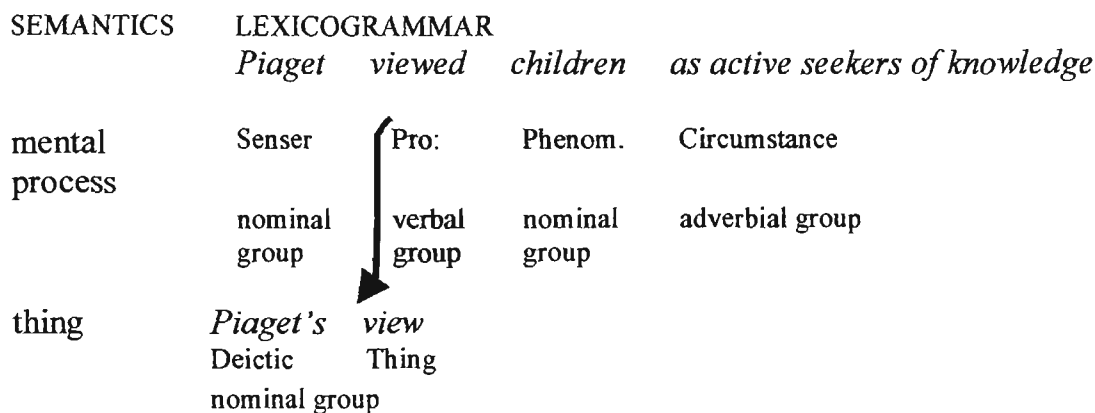
Figure 3.1 Metaphorical realisation of a mental process (through nominalisation)

Halliday's (1998) inventory of types of grammatical metaphor provides a means of mapping the range of experiential metaphors occurring in the students' texts. A more condensed version of this inventory is reproduced in Martin (1997). This condensed inventory together with examples drawn from the students' texts where possible is shown in Table 3.4.

While experiential metaphor forms the main focus of the discussion of metaphor in the students' texts, interpersonal metaphor is also considered. Interpersonal metaphor is concerned with variation in speech function in terms of mood and modality. In the previous section it was argued that in academic discourse processes such as making recommendations and expressing opinions tend to be realised incongruently in the grammar. The notion of interpersonal metaphor is a useful mechanism for comparing degrees of congruence and incongruence in the interpersonal meaning choices in the students' texts. Martin's (1992) table of congruent and metaphorical realisations of interpersonal meanings provides the main means of mapping and comparing these meanings choices in the students' texts. This is shown in Table 3.5.

Table 3.4 Types of grammatical metaphor, after Halliday (1998), and Halliday (to appear, cited in Martin 1997).

1. quality ⇨ entity Epithet + Thing	adjective⇨ noun *sophisticated = sophistication*

2. process ⇨entity
    (i)   Event = Thing
    (ii)   Auxiliary = Thing
            (tense)
            (phase)
            (modality)
	verb ⇨noun
	behave = behaviour
	
	will/going to = prospect
	try to = attempt
	can/could = possibility, potential

3. circumstance ⇨entity Minor Process =Thing	preposition ⇨noun *with = accompaniment*
4. relator ⇨entity Conjunctive = Thing	conjunction ⇨noun *so = cause/proof; if = condition*

5. process ⇨ quality
    (i)   Event = Epithet
    (ii)   Auxiliary = Epithet:
            (tense)
            (phase)
            (modality)
	verb ⇨adjective
	[poverty] is increasing = increasing [poverty]
	
	was/used to = previous
	begin to = initial
	must/will [always] = constant

6. circumstance ⇨quality
    (i)   Manner = Epithet
    (ii)   other = Epithet
    (iii)   other = Classifier
	Adverb/prepositional phrase ⇨adjective
	[decided] hastily = hasty [decision]
	[argued] for a long time = lengthy [argument]
	[cracked] on the surface = surface [cracks]

7. relator ⇨quality Conjunctive = Epithet	conjunction ⇨adjective *then = subsequent; so = resulting*
8. circumstance ⇨process Minor Process = Process	<u>be/go</u> + preposition ⇨verb *be about =concern; be instead of = replace*
9. relator ⇨process Conjunctive = Event	conjunction ⇨verb *then = follow; so = cause; and = complement*
10. relator ⇨circumstance Conjunctive = Minor Process	conjunction ⇨preposition/-al group *when = in times of/ in...times* *if = under conditions of/under ...conditions*
11. [zero] ⇨entity	*= the phenomenon of*
12. [zero] ⇨process	*= ...occurs/ensues*
13. entity ⇨[expansion] Head = Modifier	noun ⇨[various] (in env. 1,2 above) *the government [decided] = the governments'* *[decision], [a/the decision] of the government,* *[a] government(al) [decision] etc.*

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Table 3.5 Congruent and metaphorical realisations of interpersonal meanings (Martin 1992)

MODALIZATION:		PROBABILITY	USUALITY
congruent	Modal verb	*may*	*will*
metaphorical	Modal adjunct	*possibly*	*usually*
	Epithet	*possible*	*usual*
	Thing	*possibility*	*tendency*
	relational Process	*(suggest)*	*(predict)*
	projecting Process	*(I) reckon*	*(I) predict*
	conjunction	*if*	*provided that*
MODULATION:		INCLINATION	OBLIGATION
congruent	Modal verb	*may*	*must*
metaphorical	Verb complex	*be allowed*	*be obliged to ...*
	causative Process	*allow (x) to ...*	*oblige (x) to ...*
	Epithet	*permissable*	*necessary*
	Thing	*permission*	*necessity*
	projecting Process	*(I) recommend*	*(I) insist*
	conjunction	*in case*	*so*
MOOD			
PROPOSITION:	statement	declarative	*He's here*
congruent	question	interrogative	*Is he here?*
metaphorical	statement	probability	*It may be that ...*
	question	usuality	*Is it usual that ...*
	statement	projection	*I reckon ...*
	question	projection	*Don't you think ...*
PROPOSAL:	command	imperative	*come here*
congruent	offer	*Shall,can I ... ...*	*come over*
metaphorical	command	obligation	*you should ...*
	offer	inclination	*I would ...*
	command	projection: desire	*would you like ...*
	offer	modulated reaction	*I'd love ...*

At the outset of this discussion on grammatical metaphor, it was pointed out that within systemic theory there exists a range of interpretations on the notion of grammatical metaphor, particularly in terms of what can be considered as metaphorical. For the purposes of analysis, the guiding principal for identifying metaphor in the students' texts was whether the metaphor was 'unpackable' into a more congruent realisation. In other words, the surrounding environment of the text was used to determine whether a congruent meaning was available, in which there

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was a 'natural' relation between the semantics and the lexicogrammar (nominal groups as participants, verbs as processes, conjunctions as relators and so on). As such, this approach follows Derewianka's (1995) suggestion that metaphorical uses can be distinguished from other instances such as transcategorisation, technicality and abstraction by referring to contexts of use.

3.3.3   Technicality and Abstraction

One dimension of learning specialist knowledge is learning the specialist technical terms of the field. Students need to show their understanding of technical terms by incorporating the terms in their writing to explain concepts, phenomena, relations between phenomena and so on. While the technical terms occurring in the students' texts do not rely on morphological derivations from Greek and Latin as many scientific terms do (Halliday & Martin 1993; White 1998), one challenge for the trainee teachers is coming to terms with the abstract dimension of many technical concepts.

Within systemic theory two means of investigating the way students come to term with specialist knowledge are the concepts of technicality and abstraction. In order to use these concepts as reliable analytical tools, a robust description of the two concepts is required. The discussion of technicality and abstraction is informed by Derewianka (1995), Halliday and Martin (1993), Martin (1991, 1993a, 1993b), Wignell et al. (1993), White (1998), and Wignell (1998).

3.3.3.1   Technicality

Wignell et al. (1993) state that technicality is "the use of terms or expressions (but mostly nominal group constituents) with a specialized field specific meaning" (p.144). Technical terms are an intrinsic part of disciplinary knowledge building as they allow the specialist to name and order phenomena in field-specific taxonomies:

Ordinary, everyday language can be and is used to observe and describe things. For example, a landform could be described as a kind of hill with steep sides and a flat top. But by naming that landform a mesa, the geographer has created a technical name for the landform and at the same time placed it into a set of taxonomic oppositions with other kinds of landforms, for example, mesas and buttes. (Wignell et al. 1993: 137)

In the field of child development and teaching and learning as instantiated in the students' textbook and texts, the majority of technical language is the specialist names for concepts, processes as phenomena, teaching strategies, theories, and so on. Indeed, the technical naming of concrete objects or tools of the discipline seemed absent from these texts[1]. Examples of technical terms from the field are:

i) **Concepts**

Zone of Proximal Development (ZPD)
Metacognition
Ego-centric speech
Big C creativity

ii) **Processes as phenomena**

Social learning
Dramatic play
Adaptation
Maturation

iii) **Teaching strategies**

Scaffolding
Divergent questioning
Extrinsic motivation
Peer learning

iv) **Theories**

Ecological system theory
Information processing theory
Triarchic theory of intelligence
Multiple intelligence theories

---

[1] One exception is the term 'retrieval aids'. This could refer to concrete objects such as cue cards used to assist memory or to abstract metacognitive strategies utilised by the learner to aid memory.

While these technical terms have been classified into categories for the purpose of analysis, the boundaries between the categories of concepts, processes as phenomena and teaching strategies should be seen as convergent. For example, Piaget's concept of egocentric speech is a component of his stage theory; however, it is also an observable phenomenon in young children. Similarly, the teacher strategy of scaffolding has its origins as a concept in Vygotsky's social learning theory, yet it is also an observable teaching strategy. The dual property of some of these technical terms is revisited in the following section on abstraction.

Grammatically, all the technical terms listed for concepts, processes as phenomena, and teaching strategies have as their constituent structure an abstraction as Thing formed through nominalisation. A number of these abstractions are modified with classifying information, for example, *divergent questioning, ego-centric speech, dramatic play,* and *extrinsic motivation.* The constituency structure of such technical terms as nominal groups is Classifier^Thing.

<div align="center">

social   learning
Classifier   Thing

</div>

Wignell et al. (1993) and Martin (1993a) argue that technical terms imply specialist taxonomies, in which phenomena are not only given specialist meanings, but they are also systematically related to other phenomena. For example:

Superordination Taxonomy: (*a* is a kind of *b*)

12. Development can be classified into three main areas, biological, cognitive and socioemotional (citation).
13. In regard to Lysaght, (1997) ideas on biological development, includes changes in aspects of physical development, the influence of genes, and the effects of hormonal changes' [Student 12, 03/1999]

Development — Biological / Cognitive / Socioemotional
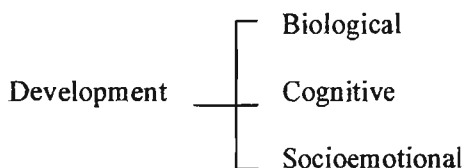
Composition Taxonomy: (*a* is a part of *b*)

189. The triarchic theory of intelligence relies on three sub-theories: the componential, experiential and contextual.
190. The componential relies on the information processing terms: metacognition, strategy application and knowledge acquisition. [Student 12, 06/2001]

Triarchic theory of intelligence

┌ Componential theory

┤ Experiential theory

└ Contextual theory
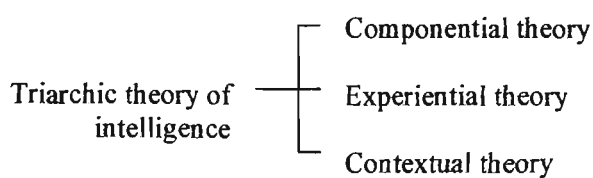
As both these examples show, the process of introducing technicality is a recursive one. That is, the technicality can be used to introduce further technicality and sub-classifications in taxonomies (Wignell 1998).

Derewianka (1995) and Wignell et al. (1993) argue that technicality is built up through the defining of the phenomenon in question, in which the technical term acquires a precise, field specific meaning. Another function of technicality is therefore to distill or compress meanings. Definitions are particularly important in fields such as education, which use everyday, commonsense terms in technical, field-specific ways. The process of defining relates the commonsense terms to new technical ones (Martin 1993a). Grammatically, one means of defining specialist terms is through relational clause grammar, in which one entity is used to identify another. Structurally, that which is to be identified is the Token, and the explanation is the Value (Halliday 1994).

| **Nature** | is understood to be | "the hereditary information [[we receive from our parents...[[that signals the body to grow and affects all our characteristics and skills"]]]] (citation). |
| (Token) | (rel: id) | (Value) |

| Whereas **nurture** | represents | "the complex forces of the physical and social world [[that children encounter in their homes, neighbourhoods, schools, and communities"]] (citation) |
| (Token) | (rel: id) | (Value) |

[Student 16, Essay 1, clauses 10-11]

In these examples, the everyday concepts of nature and nurture are assigned, through relational clause grammar, field-specific meanings associated with influences on child development.

Thus far the defining features of technicality have been identified as:

i)   terms with a specialised, field-specific meaning,

ii)   terms which are defined or exist in taxonomic relations to other technical terms,

In the students' texts technical terms were sometimes indicated through orthographic means such as initial upper case letters (*Nature, Nurture*) and inverted commas (*"classical conditioning"*). The students also used acronyms (e.g. *SCAMPER mnemonic, KLA's, ZPD*) to refer to technical concepts. However, within systemic theory, acronyms have not generally been considered as technical terms, as they are not considered as functioning to accumulate meanings in single words in the same way as technical terms do. Halliday and Martin (1993) and Martin (1993a) argue that while both acronyms and technical terms condense information, acronyms are abbreviations functioning as reductions on the expression 'plane'. Technical terms, on the other hand, compact and distill information on the content 'plane' (Halliday & Martin 1993). Furthermore:

> The difference between these two types of condensation depends precisely on the principle of stratification [in systemic functional theory], whereby language is doubly articulated as expression form (phonology or graphology), and as content form (lexicogrammar and discourse semantics).
>
> **abbreviating expression:**
> Systemic functional linguistics (hereafter abbreviated to 'SFL')
>
> **distilling content:**
> the coleomates, or [defined as] animals with a body cavity
> (Halliday & Martin 1993: 30).

White (1998) argues that this reduction on the expression plane is not the only possible function of an acronym. He argues for a distinction between the function of acronyms in the field of science and that of technology. In science, according to White, acronyms are almost always presented as abbreviatory. That is, an elaborated nominal group is presented first in the text, with the acronyms following immediately as an abbreviation. In technological discourse, however, the function of a technological abbreviation is predominantly a lexicalising one. White argues that

once a complex nominal group has been reduced to a single word-like form, that form can become an independent lexical item and lose its status as an abbreviation. One example from White of the full lexicalisation of an abbreviations is *laser (light amplification by stimulated emission of radiation)*.

For this thesis White's reassessment of acronyms is useful in considering the function and status of acronyms in the students' texts. According to White's distinction, the acronyms used by the education students in their writing are abbreviatory acronyms rather than lexicalisations. Technical terms which have a corresponding acronym tend to be introduced into the texts as a full nominal group, followed by the abbreviatory acronym in upper case and in brackets, for example, *Zone of Proximal Development (ZPD)*. This thesis takes the view that in the environment of the students' texts, acronyms such as ZPD are technical terms. While the acronyms are abbreviations, the full nominal group as a technical term tends to be defined and thus allocated a specific meaning through relational clause grammar. These terms are also taxonomically related to other specialist meanings. This is exemplified in the following text excerpt in which the term Zone of Proximal Development and its abbreviation (ZPD) are introduced:

84. The Zone of Proximal Development is another aspect of Vygotsky's theory that can be included in the principles of the supportive classroom.
85. The Zone of Proximal Development (ZPD) is the gap between a child's level of unassisted performance, and their level of performance when an adult or a more capable peer supports them.
86. The supportive classroom also has as a central principle the idea of scaffolded instruction providing support to students which is gradually lessened as they begin to become independent.
87. The idea of scaffolding has, in my observations of classrooms, been implemented by the careful planning of activities based on the students' prior experiences and knowledge, use of mixed-ability groups for many activities, structured group work, thoughtful pairings of students, using explicit demonstrations and increasing the difficulty of tasks.
88. These ideas and strategies contribute to a supportive classroom
89. by ensuring students receive the help they need
90. Using peer groups would additionally foster cooperative and supportive behaviours.

[Student 4, 06/01, HD]

In this text excerpt, the term Zone of Proximal Development is defined through a Token^Value structure (clause 85). The ZPD is also ordered as a branch within a number of composition taxonomies (*a* is a part of *b*). In clause 84, the other branches of these taxonomies are not elaborated, however comparative reference (e.g. *another aspect*) provides the grammatical evidence of the taxonomic relation.

Composition Taxonomy: explicit

84. The Zone of Proximal Development is
    another aspect of Vygotsky's theory that can   Vygotsky's theory
    be included in the principle of a supportive
    classroom

Zone of Proximal
Development
...
...
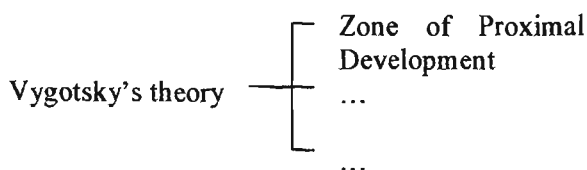
In clause 86, another branch is added to the above composition taxonomy, albeit implicitly. That is, moving outwards in the taxonomy, the concept of scaffolding is introduced as an aspect of Vygotsky's Zone of Proximal Development (i.e. it is one means through which the child can work in its ZPD). While this is not explicitly stated by the student, her awareness of the taxonomic relation of scaffolding to the ZPD to Vygotsky is apparent in the generic staging of the Point^Elaboration structure of this text excerpt (see Appendix C). The principle of scaffolding also exists in an implicit composition taxonomy to a supportive classroom (i.e. scaffolding *is part of a* supportive classroom: clauses 84, 88), whereas clause 87 explicitly elaborates *kinds of* scaffolding (superordination taxonomy).

At a later stage in the student's text, the student only refers to the acronym, the ZPD (clause 148). While the ZPD in this student's texts does have a semantic 'history', other acronyms in the students' texts are neither defined nor are they explicitly or implicitly ordered in taxonomic relations. One example of this use of abbreviations is the term Key Learning Area (KLA). While this term is not defined in any of the students' texts it was no doubt an area of study in other areas of the students' curriculum, wherein the term acquired a specialist meaning. Therefore the term KLA is part of the students' developing disciplinary knowledge. Similarly, White (1998) points out that the occurrence of an abbreviation without its full form can be explained inter-textually. That is, the writer assumes the reader can supply the full form "by recalling other texts where the elaborated form is provided" (p.281). This thesis takes the view that the status of acronyms as instances of technicality or as non-technical terms needs to be assessed on a case by case basis.

The final comment on the framework for identifying technicality in the students' texts concerns Martin's distinction between the technicality of science and the abstraction of the humanities (Martin 1993a, 1993b). In the educational discourse of child development and learning, a considerable number of the technical terms are abstractions formed through nominalisation. That is, the technical terms have abstractions as Thing and a classifying, technical element as Classifier in the constituent structure of the nominal group (e.g. *social learning*), a feature which echoes Wignell's (1998) findings on technicality in sociology. Furthermore, within Martin's (1993b) description of the discourse of ethnomethodology as anti-technical seems to be the argument that terms which are not distilled to one lexical item are not technical as they have not accumulated meaning through definition. One reason Martin characterises the discourse of ethnomethodology as anti-technical is that ethnomethodologists apparently resist distilling meaning:

> ... [the ethnomethodologists] prefer to retain the 'semantic history' of a category through compound words (e.g., *'rule-set'*) and Classifier^Thing structures (e.g., *'allocational technique'*), some of which have compound (e.g., *'self-selection techniques'*) or embedded (e.g., *'current speaker selects next techniques'*) Classifiers. ... (Martin 1993b: 260).

This thesis takes a broader view of distillation and technicality. In other words, terms which retain classifying elements in the nominal group structure or Qualifying elements can be considered as technical, with the proviso that these elements are 'semantically loaded' from the perspective of the discipline. That is, the terms are unambiguously defined either in the text or inter-textually and exist in taxonomic relations to other phenomena. The thesis also wishes to postpone any characterisation of the discourse of child development and learning as *either* technical *or* abstract before the role of abstraction in building technicality in the students' texts can be more closely considered.

In sum, the thesis takes the view that the defining features of technicality are:

i)   terms with a specialised, field-specific meaning,

ii)   terms which are defined or exist in taxonomic relations to other technical terms either in the environment of the text or of the discipline,

iii)   terms in which specialised meanings are condensed or distilled.

Acronyms were considered on a case by case basis and needed to display the above features.

3.3.3.2   Abstraction

In order to arrive at a description of abstraction that can be efficiently applied to the students' texts, it is necessary to discuss abstraction together with the related concepts of 'concreteness', lexical metaphor and grammatical metaphor. Firstly, the concept of abstractness has been traditionally considered in a constrastive relationship to concreteness. Corson (1985), however, argues against simplistic descriptions of abstractness as equivalent to 'non-concrete' or 'unpicturable'.

> More recently the abstract dimension is rightly regarded as much more inscrutable and as one in which there are notionally an infinity of levels moving in all directions, not just a simple plane as characterised in the ascending steps of 'superordinancy' or the simplistic meanings conjured up by the 'picturability-unpicturability' dichotomy. 'Abstract' is not an absolute notion; the traditional concrete-abstract dichotomy is better regarded as a continuum along which there are different kinds of abstractness. (Corson 1985: 104)

In the students' textbook and texts, there are cases where the same term signifies a concrete entity in one instance, and a more abstract entity or concept in another instance. For example, the commonsense meaning of *classroom* is a 'picturable' physical structure in which children learn. In the first example below, the room or classroom is a physical space in which the event described occurred. In the second example, the classroom is a more generalised, abstract concept, in which certain teaching and learning practices occur.

> When I asked the child to repeat what I had said (he was now facing the back of **the room**), he repeated everything I had said word for word. [paragraph 5, Student 5, 06/01, P+]

> **A supportive classroom** is one where students are recognised and valued as individuals with different strengths and weaknesses, different abilities, and different talents. [clause 69, Student 4, 6/01, HD]

The second example also points to a further blurring of the boundaries between abstract and concrete entities. While the notion of a 'supportive classroom' is a generalised, superordinate concept, it may also be considered as an observable phenomenon or process. That is, it is possible to 'picture' as a process, a classroom in which teachers support students in the ways described in the second example through a range of activities and teaching approaches. The term *a supportive classroom* therefore has the dual property of being an abstract, generalised entity as well as a observable process in which the abstract concept is instantiated. Many of the abstract technical terms in the students' texts have this dual property of referring to an abstract generalised concept, as well as a process in which the generalised concept is 'picturable' or instantiated. Other examples include *social learning, dramatic play, scaffolding, extrinsic motivation* and *peer learning*. This dual dimension of many of the abstract concepts in child development and learning is an extremely important factor in the trainee teachers' learning. The students need to transfer the abstract concepts such as *scaffolding* and *peer learning* to classroom situations so that the abstract concepts are instantiated as processes and become part of the trainee teachers' teaching practices. This learning process involves a complex shunting from concrete to abstract concepts, and from abstract concepts to concrete and abstract processes. Linguistically, this shunting has implications for the lexicogrammatical choices in the students' texts. In order to map these types of shunting in the students' texts, a continuum of abstractness, as Corson (1985) suggests, would be a more efficient analytical tool than a dichotomous relation with which to identify and map the different types of abstraction occurring in the students' texts.

Another useful approach for exploring abstraction in the students' texts is provided by Wignell (1998). Wignell refers to abstraction as "moving from an instance or collection of instances, through generalisation to abstract interpretation" (p.301). In his interpretation abstraction is a resource which realises distance from context. This view of abstraction lends itself to capturing the dual dimension of some of the technical terms in the students' texts. That is, *scaffolding* can be both an observable phenomenon (an instant or collection of instances), as well as a generalised, abstract

concept. Wignell (1998) also distinguishes between abstraction as a mass noun, and abstractions as a count noun and argues that both abstractions and grammatical metaphor contribute to abstraction in text.

As was pointed out in the earlier section on technicality, the concept of abstraction is sometimes placed in opposition to technicality. In order to clarify the position taken by this thesis on the relation between abstraction and technicality, these concepts will be considered from the perspective of lexical metaphor and grammatical metaphor.

In rhetorical theory, metaphor refers to the use of a word with a transferred meaning (Halliday 1994). That is, a metaphorical use of a word is when a word is used to describe something related to that which the word usually describes. In many instances the metaphorical use of a word involves transferral from a concrete meaning to an abstract one. This is the case for a number of the technical terms of child development. For example, the abstract, technical concept of *scaffolding* (the guidance or support of an adult to help a child solve a problem) involves the metaphor of a temporary structure or framework. Other examples of commonsense meanings redeployed as technical terms are *Information Processing Theory, discovery learning, nature,* and *nurture.* White (1998) suggests that technical terms that are derived from "redeployed vernacular lexis" (p.275) do not displace the original everyday sense of the word, rather they extend it through lexical metaphor. In one sense this extension through lexical metaphor provides a cognitive link by which technical terms and concepts can be more easily learnt and understood by the students. However, the challenge for students is coming to terms with many technical items that represent inherently abstract, generalised concepts.

One strand of inquiry in systemic theory has been the role of grammatical metaphor in the evolution of scientific discourse (for example, Halliday 1993). This work has been extended by Wignell (1998) in the social sciences. According to Wignell, in the social sciences the abstract is made technical:

...social science takes as its starting point an abstract construal of experience and then reconstrues that initial abstraction technically. (p.298)

Wignell's work on technicality and abstraction in the social sciences is particularly relevant for this thesis not only as the field of child development and learning falls within the domains of the social sciences, but also as it clarifies the role of abstraction in the technical terms of the discourse. In the discussion of technicality it was pointed out that many of the technical terms in child development and learning are abstractions formed through nominalisations, for example, *scaffolding*, *maturation*. When considering the potential status of such technical abstractions as grammatical metaphor, this thesis follows the position argued by Derewianka (1995):

> ...while grammatical metaphor may be implicated in the evolutionary phase of certain types of technical terms, once these terms have become established and located within a particular field, it is no longer the case that both the congruent and metaphorical options are equally 'at risk', and the term has become a 'faded metaphor'. (p.230)

In other words, the presence of technical terms which can be grammatically considered as abstractions were not considered as instances of grammatical metaphor in this thesis, rather they were discussed from the perspective of technicality.

The discussion of grammatical metaphor has provided a means of clarifying the relation between technicality and abstraction in the students' texts; however, it remains to clarify for analytical purposes the status of abstractions as instances of grammatical metaphor. Ravelli (2000) argues that there is a "fuzzy boundary" between abstraction and metaphor, while Martin (1997) uses the term abstractions (as a count noun) in opposition to grammatical metaphor. This is evident in his provisional framework for types of things shown in Figure 3.2.

```
          ┌─ indefinite pronouns    ↘      some/any/no thing/body/one
          │
          │              ┌─ everyday    ↘      apple, bottle, blanket
          ├─ concrete →│
          │              └─ specialised ↘      mattock, anvil, Tundish car
          │
THING     │              ┌─ technical    ↘      inflation, metafunction, gene
──────►│
 TYPE     │              ├─ institutional ↘      regulation, bureau, policy
          ├─ abstract →│
          │              ├─ semiotic    ↘      fact, idea, word, concept, notion
          │              │
          │              └─ generic     ↘      colour, time, manner, way, type,
          │                                      kind set, class, cause
          │
          │              ┌─ processual  ↘      collision, perception, departure
          └─ metaphoric →│
                         └─ quality     ↘      strength, bravery, beauty
```

Figure 3.2 Kinds of thing: covering abstractions and grammatical metaphors (Martin 1997: 30)

In the 'abstract' branch of this network, the categories of technical and institutional things include terms which are faded metaphors of the type described by Derewianka (1995), while the 'metaphoric' branch includes processes as things, and qualities as things. Martin points out that the analysis of metaphorical and abstract things cannot be determined by derivation alone. For example:

> **regulation** *as institutional abstraction:*
> Regulations don't permit that activity

> **regulation** *as metaphorical process:*
> Excess regulation of students' behaviour may not always be in the school's best interests. (Martin 1997: 31)

For the purposes of this thesis, Martin's division between abstract and metaphoric things is not sufficiently 'delicate' or detailed to recognise the semi-technical status

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of a number of metaphoric terms. In this thesis, 'semi-technical terms' refers to concepts or phenomena that are central to the concerns of the discipline, yet which are not sufficiently defined or classified to qualify as a technical term. In the field of child development these semi-technical terms also have a vernacular meaning. Examples of semi-technical terms are *creativity, teaching, learning, intelligence, motivation,* and *development.* On the one hand these terms are instances of grammatical metaphor; as they are processes or qualities reconstrued as things. However, their status as metaphor proper is questionable, as these terms frequently function as Thing in the nominal group structure of numerous technical terms of the discipline. For example:

semi technical terms	technical term	
creativity	*big C*	*creativity*
	little C	*creativity*
learning	*peer*	*learning*
motivation	*extrinsic*	*motivation*
	intrinsic	*motivation*
intelligence	*spatial*	*intelligence*
	Classifier	**Thing**

This thesis takes the view that the presence of these semi technical terms in the students' texts indicates that the students are engaging with issues that are central to the discipline. Therefore in terms of mapping the students' learning through their writing, it is important to distinguish these terms from other forms of grammatical metaphor. For the analytical purposes of this thesis, Martin's provisional network of Thing types forms the foundation of a Thing type network. Following Martin, the abstract component of the network includes terms for semiosis such as *fact* and *theory,* as well as "terms for generic dimensions of meanings" (1997: 31). Martin's network has been adapted as a means of distinguishing between concrete items, different types of abstractions, and grammatical metaphor in the students' texts. The addition made by this thesis to Martin's network is the branch of semi-technical abstractions, functioning as a category between technical and metaphoric terms. Another difference between the network adapted for this study and Martin's is that it makes the indeterminancy between the cases explicit by incorporating a continuum dimension to the network. This continuum dimension is indicated by double and

single-headed arrows. The provisional network of thing types in the discourse of child development is shown in Figure 3.3.
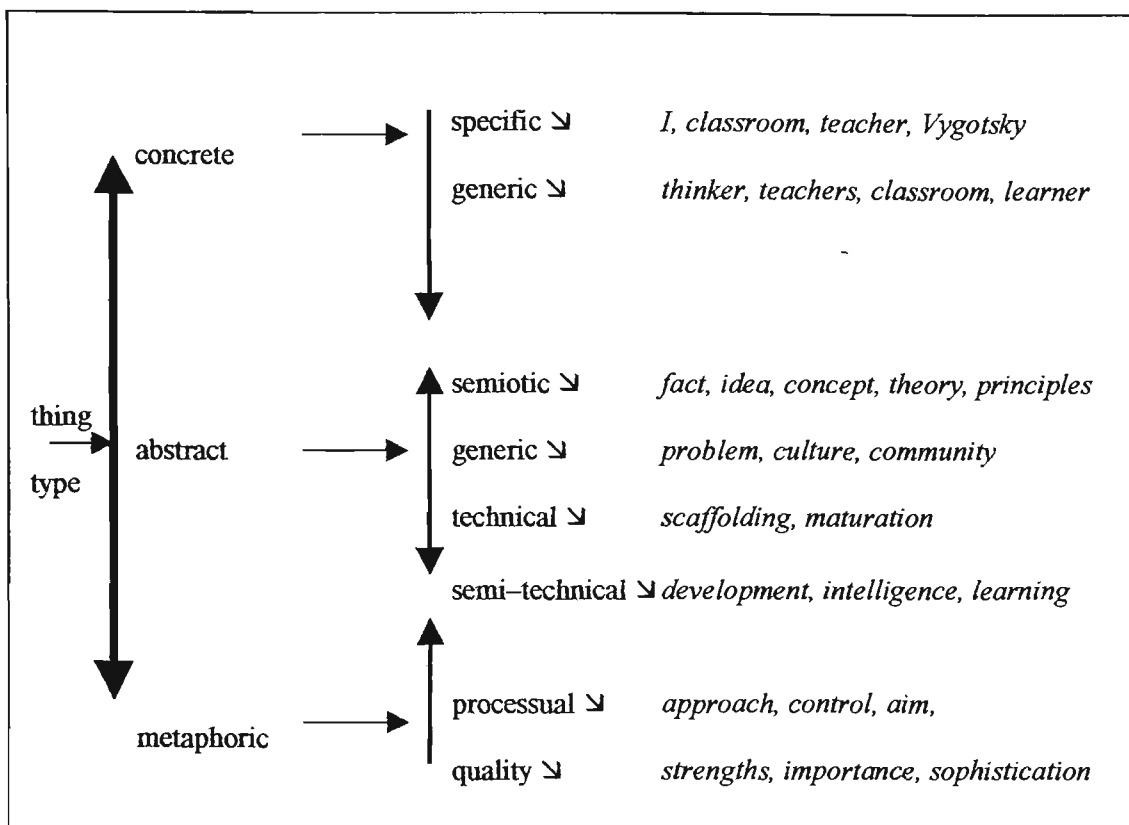
Figure 3.3 Provisional network of Thing types in the discourse of child development adapted from Martin (1997)

In sum, the concept of abstraction is applied as an analytical tool to the students' texts in order to consider the degree of abstraction in their texts as well as how abstraction is realised. Following Wignell (1998) abstraction is interpreted as realised through abstractions and grammatical metaphor. The difficulty of distinguishing between instances of concreteness as opposed to abstractness, and between abstractions and grammatical metaphor has been noted in the discussion and the overlap or blurring between these concepts highlighted. The Thing type network shown in Figure 3.3 is an attempt to address this indeterminancy as well as to provide distinct categories for the analyst with which to approach data. In other words, while the network provides a means of classifying lexicogrammatical choices, the continuum dimension is a reminder that the boundaries between the categories serve a pragmatic function, rather than indicating a clear division between the types of categories.

3.4   SUMMARY

This chapter has introduced the research design noting in particular the naturalistic setting of the research, the longitudinal design of the study and the integrated research paradigm. The second half of the chapter concentrated on describing in sufficient detail the analytical tools and concepts from systemic theory which are the main means of analysis for the textual data. This discussion involved determining parameters for the concepts of grammatical metaphor, technicality and abstraction.

The following two chapters form the first strand of inquiry in the thesis: the social context that shapes and informs the students' writing development.

CHAPTER 4

LEARNING TO WRITE IN A DISCIPLINARY AND INSTITUTIONAL CONTEXT

This chapter provides a detailed description of the disciplinary and institutional context in which the trainee primary teachers were writing. As well as identifying the valued writing practices and learning processes of the discipline and university, the purpose of this and the following chapter is to investigate the influences which shaped and informed the students' learning. The main questions addressed in this chapter are:

i)   What are the valued writing practices and learning processes mediated through writing of the discipline and university as practised at the site of this study?

ii)   What is the relation of the students' writing and knowledge building practices to the mature discourse community of the discipline? Is the concept of discourse community an accurate one for the trainee teachers?

iii) Do the students' tutors attempt to influence the students in any socialisation process?

The first and second questions are addressed by drawing on interview data with the students' tutors and with the students, as well as documentation such as subject outlines, the Faculty Handbook, and marker commentary on the students' assignments. The response to the third question likewise draws on these data sources; however, the focus is the socialising role of marker commentary on the students' assignments.

The chapter is organised in a four-part structure. First an overview is provided of the institutional and disciplinary context of this study. This is followed by the analysis and discussion of the tutor interviews. The third part of this chapter is the student

interviews, while the final part is the marker commentary on the student assignments. The chapter closes with a discussion addressing the questions asked at the beginning of this chapter. This discussion draws together the findings from the diverse data sources.

4.1   THE INSTITUTIONAL AND DISCIPLINARY CONTEXT

In order to provide an account of the contextual influences which informed the students' writing, it is helpful to distinguish various contextual layers of the writing and learning environment. Lea and Street (1999) identify three levels of practice in higher education: institutional, disciplinary and individual. While Lea and Street do not explicitly clarify these levels of practice, the institutional in this study is understood to refer to the university, the disciplinary to the discipline such as history or geography, and individual to tutors and lecturers. At the institutional and disciplinary levels, the contexts can be considered to be multidimensional ones. That is, the institutional level includes not only the university which is the site of this study but higher education in the Australian context. Similarly, the disciplinary level includes not only the Faculty of Education in which the pre-service teachers were studying but related discourse communities.

This longitudinal study was undertaken in a Faculty of Education at a regional university in Australia from 1999 to 2001. The university attracts a considerable number of non-English speaking background students. While the number of non-English speaking background students enrolled in primary teacher education at this university is small, demographic data collected by the Faculty indicate that approximately one third of the 1997 and 1998 cohort of primary education students were from lower socio-economic backgrounds. Concern about the ability of a socially and culturally diverse student body to engage with the literacy practices of the university remains high on the agenda of the university's education committee. The university's initiatives to address students' literacy needs include the establishment of an English Language Studies major (Thomson et al. 2000), the development of on-line and interactive writing guides (Pollock et al. 2001;

Woodward-Kron et al. 2000), and numerous integrated approaches to teaching literacy in the faculties (Skillen et al. 1998).

The institution also places considerable emphasis on the development of critical thinking skills and critical analysis. For example, the institution regards critical thinking and critical analysis as a desirable graduate attribute:

> *Attributes of a graduate (excerpt from the University's web page)*
>
> A commitment to continued and independent learning, intellectual development, **critical analysis** and creativity

The valuing of critical analysis and critical thinking is also a feature of the disciplinary context. At the disciplinary level the requirements of analysis and critical analysis in student writing appear in subject guidelines, assessment criteria, essay questions and essay writing guides. The excerpts below are drawn from Faculty of Education documents. The highlighted sections are the researcher's emphasis.

> *Faculty of Education assessment guide, Faculty of Education Handbook, 1999*
> **Critical analysis** of source material, rather than **unquestioning acceptance and description**

> *Objectives from subject guidelines, Faculty of Education*
> **Critically analyse** the concepts of culture and education and the relationship between schooling, the individual and society

> *Assessment criteria from subject guidelines, Faculty of Education*
> Please note that **mere description** of your data is not adequate.

> *Sample essay questions from the Faculty of Education*
> **Critically evaluate** the extent to which schools perpetuate gender division in society

> Give a **critical analysis** of the notion of social justice in education.

The requirement of critical analysis and evidence of critical thinking was also a feature of marker commentary on the students' texts collected for this study. Evidence of critical analysis was generally praised or its absence noted.

Sample marker commentary, 1ˢᵗ year data
You **analysed**, discussed and compared the different theories of language development very well. (High Distinction)

Excellent. This is a comprehensive and **critical** treatment of Piaget's theory (High Distinction)

Your **critical analysis** of the sources shows your extensive understanding of the complexity and controversy of the issue. (Distinction)

Your treatment is balanced, **critical** and your conclusions sound. (High Distinction)

Good **critical analysis** (Distinction)

Your title doesn't quite indicate the full extent of your focus and there is little room for **critical analysis**. (Pass+)

To gain a higher grade you have to do **less summarizing and more discussing**. (Pass+)

While it is possible to argue confidently that the overlapping concepts of analysis, critical analysis and critical thinking are highly valued in both the institutional and disciplinary context of this study, stating what critical analysis involves, particularly in writing, is a less straightforward task. In the departmental documents collected for this study, critical analysis was not explicitly defined, nor were there any accessible explanation or examples of critical analysis in writing. As is apparent in some of the above excerpts of marker commentary and assessment criteria, attempts to clarify what is meant by critical analysis is sometimes in terms of what it is not. That is, critical analysis is sometimes contrasted with descriptive writing. Descriptive writing is regarded as having little value while analysis is highly valued.

While critical analysis is not explicitly defined in the documents collected for this study, it is possible to attempt to 'unpack' the concept of critical analysis by compiling an inventory of features from the available data. The main data are the Faculty Handbook and interviews with participating tutors. In the 1999 Faculty Handbook, five assessment criteria are listed for writing: knowledge, discrimination and processing skills, research, creativity/initiative, written presentation, and control

of genre. The two criteria most relevant to critical analysis are knowledge, and discrimination and processing skills. For a High Distinction to be anticipated, these criteria are further elaborated as:

Knowledge	• Extensive understanding of key knowledge, theories and concepts and the relationships among them.
Discrimination and processing skills	• Capacity to evaluate conflicting interpretations and draw conclusions • High degree of precision and vigor in arguments (1999 Faculty Handbook)

These elaborations can be distilled and interpreted as the following processes in writing:

- *making connections*

- *evaluating interpretations and drawing conclusions*

- *arguing persuasively*

The reason for highlighting the valuing of critical analysis in both the institutional and disciplinary context is that it is a recurring theme in the Faculty's descriptions of valued writing and learning practices as well as in the tutor and student interviews. As the tutors were the main interface between the students and the other contextual levels of practice, it is to the tutor interviews that the discussion now turns. As well as assisting in unpacking the concept of critical analysis in writing, the interviews provide insights into the role of the tutors in developing the students' writing, the tutors' expectations, and the role of assignment writing for learning. The tutor interviews also help to decide whether undergraduate trainee teachers are viewed as participating in the knowledge building practices of the discipline.

4.2   TUTOR INTERVIEWS

Interviews with the students' tutors were conducted in the first, second and third year of the study. The first year interviews were unrecorded; however, notes were taken. This approach was considered preferable to a taped interview, in order to allow the researcher to establish some rapport with the tutors. The second and third year

interviews were similarly informal, however these more extensive interviews were taped and transcribed.

4.2.1 Tutor Interviews Conducted in the First Year of the Study

In 1999, semi-structured interviews were conducted with three of the four tutors who marked the participating students' assignments. The interviews were based on the tutors' written responses to several questions. The researcher discussed the tutors' written responses in informal, ten to fifteen minute conversations with each tutor. The discussions took place at the end of session, when the students' second essays were collected for photocopying. The questions focussed on any assistance the tutors provided to the students in writing the assignments and the tutors' observations of any developments in the students' writing. The focus questions were:

- *Did you discuss with your students the essay assignment in tutorials? If so, what was the nature of these discussions (particularly in regard to style, structure, essay writing conventions etc.). Did the discussion draw on students' first assignment attempts?*

- *Do you feel the students' second essay showed any improvements? If so, in what way?*

In response to the first question, all the tutors confirmed that they discussed the essay in their tutorials. Two of the tutors attempted to make explicit to the students the types of writing which the task required. One tutor did this by showing overhead transparencies on assessment criteria developed for the Faculty by the university's learning development unit. The criteria were: information retrieval and processing, structure and development of text, use of appropriate academic English, grammatical correctness and quality of presentation. The criteria included explanatory material with examples. Before students commenced their second assignment, this tutor repeated the discussion of the assessment criteria and drew on additional examples. Similarly, the second tutor outlined for the students important facets of essay writing. These he described as:

1. *clarity and correctness of expression (sentence structure, spelling, punctuation, etc.),*
2. *importance of thorough and detailed documentation of sources,*
3. *importance of essay structure generally and developing arguments to conclusion(s).*

In regard to point 1), the tutor pointed out that he outlined the importance of these aspects, rather than explaining grammatical points (*"Not <u>what</u> is correct so much as <u>importance</u> of it"*, original emphasis). As with Tutor One, this tutor referred students to an institutional document, in this case the Faculty Handbook, in order to provide students with more detailed explanations of essay writing requirements. Tutor Three's discussion of essay writing appeared to have a more process orientated approach rather than on the essay as product. This tutor discussed with the students how to choose an essay topic by considering some examples. She also focussed the discussion on general aspects of essay writing as well as aspects related specifically to the topic. She explained that the essay should include some comparison of the theories in the chosen area, the educational implications of the theories and detailed examples to illustrate and clarify the statements. Her discussion on general aspects of essay writing included the need for students to include their own opinion, and to support all statements with evidence. She also used examples of unjustified statements from students' first essays in her explanation to the students.

In response to the second question all the tutors noted an improvement in students' writing. Tutors One and Two noted an improvement in grammatical correctness and use of *"appropriate academic English"*, while the third tutor noted that students were better able to support their ideas and statements with evidence.

While Tutors One and Two noted an improvement in students' writing, there was still a strong sense of frustration, even resignation, present in the written comments as well as in the discussion about aspects of the students' writing, mostly to do with grammar and orthographic conventions. For example:

Written comments:

...Some students still don't seem to grasp the importance of striving for 'perfection'. Carelessness and absence of effective proof-reading are still apparent in too many cases.... Maybe I'm overly concerned with the "striving for perfection" bit, but it continues to seem that too many of them – and not just first year – reckon "near enough's good enough".

[Discussion in tutorials of the] *2nd assignment drew on results of 1st as well as going back to square 1 – you would think in many cases nothing had been done prior to 1* [i.e. discussion before 1st assignment].

Verbal comments:

They still can't use apostrophes

They still can't write sentences.

The tutors' concerns about grammatical and orthographic aspects of the students' writing were reflected in their marginal notations and summative comments on the students' essays. The tutors consistently corrected spelling, punctuation, and grammatical errors – for example, features such as a non-finite clause punctuated as a sentence were modified. In the summative comments on the students' essays the tutors urged the student(s) to address orthographic and grammatical aspects of their writing. The need for students to adhere to the stipulated Faculty referencing conventions was also a recurrent theme in the discussions as well as in the tutors' marginal comments on the students' essays.

4.2.2 Tutor Interviews Conducted in the Second and Third Year of the Study

The individual interviews with the tutors conducted in the second and third year of the study were more extensive in their focus. These interviews were taped and transcribed, and were approximately thirty to forty five minutes in duration. Five tutors participated in the interviews: four of whom hold doctoral level qualifications, and two of whom are at the senior lecturer level or above. The fifth tutor has extensive tertiary and secondary teaching experience. With the exception of one informant, the tutors marked the second or third year assignments that form the

textual data for this study. Furthermore, three of the informants were or had been co-ordinators of subjects in the study.

The focus questions for the interviews were:

a) *What role do you see assignment writing as playing?*

b) *What genres do you require your students to write?*

c) *What are you looking for when you assess?*

d) *Do you see any link between the students' writing now that they are in third year and professional academic writing? The writing that academics do in journals?*

e) *How do your expectations of students' writing change during the course of the degree? What do you expect of students now that they are in third year?*

f) *In the literature on students' development as writers, particularly in regards to postgrads, the process of learning to write is often described as one of apprenticeship. I wonder if you think from your experience and practice if it is an accurate metaphor to describe the process of students' learning to write?*

The general purpose of these interview questions was to provide contextual information which could inform the linguistic analysis. However, the interviews also sought to identify contextual influences on the individual level of practice. Therefore, questions b) to f) aimed to probe the tutors' perceptions of aspects of their practice. Questions a) and e) sought to explore the tutors' perceptions of the relation between writing and learning, while the final question sought the tutors' perceptions of one interpretation of learning to write in a disciplinary and institutional context.

In their teaching roles as well as gate-keeping roles, tutors' practices are informed and shaped by their disciplinary and institutional contexts. For this reason, numerous excerpts from the transcript data have been included in order to provide a more detailed and authentic picture of this most significant level of practice.

a)   *What role do you see assignment writing as playing?*

While three of the informants mentioned the gate-keeping or assessment function of assignment writing, all the respondents viewed assignment writing primarily from a pedagogic perspective, in other words as having a teaching and learning function. Tutor One saw assignment writing as having a teaching function, while Tutor Two saw assignment writing as getting students to think through an argument, interpret readings and make an argument from those readings. Tutor Three perceived assignment writing as functioning to consolidate ideas and understanding, which is helped through students' reading. Tutor Four's response highlighted the role of writing in analysing research and synthesising theory and practice. The following is an excerpt from the interview transcript:

Transcription conventions: (adopted from Eggins 2000)

=	indicates overlap with other speaker
...	short hesitation
-	false start
bold	emphatic stress
[ ]	encloses non-verbal /or paralinguistic information
( )	untranscribable speech

> I see it as an analytical tool ... what the written assessment forces them to do is to get much more into the heart of key issues that we are dealing with. ... in the third year subject we are really trying to focus in on the nature of thinking and learning for children. Because these people are all going to be teaching children at what is probably the most vital stage of their formal education, which is the primary level. ... They go on practicum experiences, and that's their prac, you know, and then they go to these lectures and that's theory, and they have very little exposure to research that promotes theory, or disconfirms a theory... And so um the written assignments, all the written assignments that we do are trying to get them to get to that level of analysis. To say, well, what does this mean for me? So rather than learning, because there is nothing out there that does it for them, just read and learn and spit it back out again at us, they actually have to work it out for themselves. So it's forcing them into – that's what I'm hoping the written assignments do.

Tutor Four also noted that writing is a more constrained form of communication than verbal communication. This aspect is prominent in Tutor Five's response:

> I think that assignment writing helps students to put their ideas in a better order. Written language forces them to express their ideas in a more explicit way, they can read it through and reflect on it and edit and re-structure etc. I think this helps to think the ideas through and understand them better. To write is harder than to talk, because you do not have all these means of non-verbal communication when you write. You have to express everything just by words.

b)   What genres[1] do you require your students to write? Why?

This question was modified to suit the person being interviewed. In other words, subject co-ordinators, who were responsible for the design of assessment formats, were asked why a particular assignment genre had been chosen. As the selection of assignment genres varied in the three subjects, the discussion with individual tutors tended to focus on the assignment genres required in the subject(s) the tutors were teaching. An overview of the assignment genres required in the subjects investigated is provided in the table below.

	Learner genres
1st year subject	2 essays
	Group project: observational learning
2nd year subject	Field study research report and literature review (in pairs)
	Essay
3rd year subject	Journal article review
	Essay

In response to this question, Tutors One and Two reported that they preferred the essay format with Tutor Two explaining that the essay format required the students to develop an argument. Tutor Three described the essay as a useful format through which the students could communicate what they had understood from their lectures, reference books, tutorials and so on. While Tutor Three was not responsible for including the research report as an assignment genre in the second year subject, she

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[1] The term genre is used in the Faculty Handbook in the description of assessment criteria, so the researcher was able to assume shared knowledge and that the tutors would associate the term genre with text types.

assumed that it had been included in order to encourage students to undertake self-directed learning. Furthermore, she found that the research report was "a way of moving the theory into practice":

> The research report was also a way of moving theory into practice. A practice which involves reflecting and interpreting, and doing analysis through the theory. I think the report format is a useful tool for researching, reflecting, analysing and interpreting material. [Tutor 3]

Tutors Four and Five focussed their responses on the journal article review required in the third year of the students' studies. According to these tutors, the purpose of selecting this learning genre was to engage the students in primary research. That is, students should read primary sources rather than only secondary ones in order to gain some sense of "*where theory comes from*". As with the justification of the research report, these two tutors emphasised the need for students to take a critical approach to research findings, to question the credibility of the findings, and to make connections:

> [*on why students were asked to write a journal article review*] Um for a couple of reasons. One is because most of their training in terms of other subjects they do is dealing with secondary texts rather than primary sources. So that's one of the reasons. To get them to try and understand where theory comes from. Not all theory is based on research, um, in terms of what they do as researchers, they will be consumers of research. They'll get directives from the department or from where-ever, saying this is the only way to teach. You know, you've got to stop doing what you've been doing for the last twenty years in reading, and now you have to teach it like this. To me, that kind of thing, if they don't have an understanding of how research is conducted, and have some kind of critical understanding of the limitations of research, they can be too easily buffeted by the winds of change. So I want them to be able to, to be actually in their teaching practice to be **critical** consumers of research that comes out. To question how, where this finding came from, how credible it is, and so on. How it compares. So if they support it, or dismiss it, it's in an informed way, rather than a knee jerk reaction. [Tutor 4]

Similarly, for Tutor Five the purpose of the assignment task was for students to engage critically in knowledge building practices: to have a better understanding of

the way research contributes to knowledge, and to question the reliability of the research:

> How I see it is, it is important for them, in first year they learn theories in our subject, then in third year they learn recent research, and they learn how to draw knowledge from research articles. So it's not done for them by somebody. It's not described for them. They go to original research. They learn how to draw knowledge and they learn how to judge on it, how to judge real knowledge and what that is. They can question it, how to evaluate it. ...Was it really reliable knowledge? Knowledge is always the result of research, so that's what I want them to understand. It's not really knowledge that is straight from somewhere, and you have to learn it. You have to learn how it came through. [Tutor 5]

c) *What are you looking for when you assess?*

As with the previous question, this question was modified to reflect the involvement of the tutor with the three subjects. In other words, if the tutor taught the first year and third year subjects, they were also asked whether their expectations changed. For this reason the responses to both questions c) and e) are described in this section. Question e) is *How do your expectations of students' writing change during the course of the degree?*

Recurrent themes in discussion of these questions were the need for structure and argument, punctuation and spelling, and use of evidence and accurate referencing. In response to the question about changing expectations, two tutors initially responded that they felt students' writing did not change much at all; however, this assertion was modified in both cases in the course of discussion. The initial response appeared to be the result of the tutors' concerns about remaining problems with spelling, punctuation and grammar:

> Yes, grammar, spelling, punctuation, all of that. You know, and I've said to them, by now you should be striving for perfection. At least in your presentation, and I have to say I get pretty cranky when I'm constantly marking out spelling errors. [Tutor 1]

> Well, they probably don't change very much, and that bugs me every year. But I suppose they do. They do. I expect to see that they have

mastered some of what you would see as being the basics, and what you see they don't master is things like punctuation ...[exasperated sigh]. [Tutor 4]

In second and third year, the need for analysis in their writing and a critical approach to the literature was foregrounded.

> Have they moved beyond description? Description is just fine, but that's only a pass. Have they analysed? Have they been able to draw threads, show tension? Have they been critical in their approach? [Tutor 3]

> Now [in third year] I've said, look. I don't really accept anything from you which is just description of the theories. Because that's your past. I assume you know it. If you don't, go and read the textbook. I don't want any descriptions. Because I assume you have to know it, and you have to be able to describe it. And now I need your understanding of all parts – what sense does it make to you in the classroom most? Just look at the theory, what thoughts does it provoke in your mind? What ideas does it bring to your mind when you teach in the classroom? Or how you connect it to the classroom. That's what I want.

Greater attention to documentation and the acknowledgment of sources was noted as an expectation in the writing of second and third year students. It is clear from the tutors' responses that the greater attention to referencing goes beyond the need to format the citations accurately. Tutor One stressed the need for students to acknowledge their sources, otherwise the students' argument would remain as assertions:

> But I do want to see that they have acknowledged their sources, and without that it lacks authority. ...they [the paragraphs] just become assertions ...you can't just have unsubstantiated opinion.

Tutor Four expected third year students to be drawing more widely in their reading as well as making more critical and sophisticated use of references:

> I don't expect to see the 1961 developmental psychology text cited in a third year essay.

Tutor Two linked acknowledging sources with students learning to speak "from their own position". That is, the process of acknowledging sources required students to recognise that they were incorporating someone else's thinking into their argument:

> You'd hope that there would be a stronger sense of being able to speak from their own position, and recognise that they are speaking from others. Thing like "according to", I mean, if I were working with them, I would be pushing really strong markers that this is somebody else's idea, position, thinking. It's harder to say how they'd mark their own, but to actually be able to mark others, to recognise, that this is somebody else's ...
> R: = another voice?
> T: Another voice, voices.

d)   ***Do you see any link between the students' writing, now that they are in third year, and professional academic writing?***

This question drew mixed responses from the tutors. All tutors hesitated and thought carefully before responding with two of the tutors commenting that they hadn't really thought about this aspect before. That is, they had not considered this question in regard to the pre-service teaching students. Tutor One responded that he marked with the view that he was training the students to be academic writers. After some deliberation Tutor Four pointed out that she drew on her own experiences as a writer of academic papers to assist students in coming to terms with academic writing. She made parallels with her own writing in order to point out to the students that the process of writing can aid understanding; "*and that often the research opens more questions than answers it provides*". Tutor Three made a similar comment:

> I guess they are learning skills. They are learning those techniques, you know, reports, journals, articles. I'm not sure that there is a strong link. When I did psychology it gave me a really good grounding for how to do research, how to write a research report. It was very useful for my thesis. If they go on to do Honours, they need to know that. They need to be able to think about what the argument is, and refine it.

> I think you know, when you write, it propels your thinking. With my thesis, you get to the end of a section, and then you know what you were thinking.

Tutor Five said that she considered the skills or practices she was attempting to develop in the students, such as distinguishing between fact and opinion, were life skills rather than academic skills.

f. In the literature on students' development as writers, particularly in regards to postgrads, the process of learning to write is often described as one of apprenticeship. I wonder if you think from your experience and practice if it is an accurate metaphor to describe the process of students' learning to write?

The final question in these interviews again drew mostly ambivalent responses. The tutors tended to respond that they didn't know because they had not considered how they would describe the process of students' writing development. On reflection one tutor responded that he hoped students' writing had developed partly as a result of his feedback on their assignments. Once the metaphor of apprenticeship was introduced into the discussion, several of the tutors explored the implications for their own practice and for the practices of the Faculty. For example:

> I think it is definitely desirable. I mean, I have a very strong view of learning through writing. I mean, that's to me learning through talking as well. To me, in terms of academic discipline, writing is the most important thing. And that's how I' d like to view it. What I think is, that it's something that we have to address, is that every subject is, sort of works in isolation. And there is no sense of, even though lip service is always given to it, there is no sense of actually developing those skills over time. [Tutor 4]

> At my class? I don't think so. Because we practically don't write anything together. But I've thought about it, and it would be very good. Some of them ask for it. But it is not regarded, I suppose as, …but at this stage I don't feel confident to do it. Some ask "Do you have an example of a good essay?" "Can I borrow it". And I always feel, umm, I'm not sure. I have some examples – I've kept them. But it's so personal and if you give them some model, what would they do? Sometimes you really feel, it's much harder after you've read something because you wouldn't escape that. You wouldn't escape the form of logic. But somehow I think it's a good way, you know, umm, to do some modelling.

4.2.3 Discussion of the Tutor Interviews

A significant feature of the tutors' responses is their homogeneity and the concord between the tutors' approach to students' writing and the values reported for the institutional and disciplinary contexts. It should be noted that the tutors were asked to participate in the study after they had marked the 1999 essays.

The tutors participating in this study took an active role in students' writing development. The tutors attempted to clarify their expectations in regards to writing tasks prior to students attempting a piece of written work. The explanations tended to include a limited amount of modelling through annotated excerpts of student texts and discussion. The tutors made their written assessment criteria explicit by making available to the students the criteria outlined in the Faculty Handbook. However, the tutors were hesitant to draw on the metaphor of apprenticeship to characterise the process of their involvement in the students' writing development. While providing feedback was seen as contributing to students' writing development, the tutors' perception of their engagement with the students' writing was insufficient to refer metaphorically to the process as a writing apprenticeship. In other words the tutors did not see themselves as working together with students in order for the students to learn the specialist disciplinary ways as they are realised in writing. As one tutor explained, *"we practically don't write anything together"*. The role of marker feedback in the students' socialisation into disciplinary discursive practices is examined at a later stage in this chapter.

The tutors' interest in the relation between writing and learning is evident in some of the responses to the question on the apprenticeship metaphor as well as to the question on the role of written assessment. Tutor Four's comment *"I have a very strong view of learning through writing"* is a direct statement that in essence represents other comments made highlighting the pedagogic role of assignment writing. The tutors make strong connections between the process of writing and thinking and learning. This was particularly evident in Tutor Five's response:

> I think that assignment writing helps students to put their ideas in a better order. Written language forces them to express their ideas in a more explicit way, they can read it through and reflect on it and edit and re-structure etc. ... To write is harder than to talk, because you do not have all these means of non-verbal communication when you write. You have to express everything just by words. [Tutor 5]

Finally, writing was also seen as a way of engaging the students as future practitioner with the theory: in the words of Tutor Four, *"To say, well, what does this mean for me?"*

The tutors' interest in questions of writing and learning, their efforts in assisting students' writing development, and their involvement in this research is not surprising considering the research was carried out in a Faculty of Education. The tutors' interest in the cognitive or learning function of writing can also be attributed to the tutors' disciplinary orientation to psychology in their own education and profession. This disciplinary orientation is not an insignificant factor in the discussion of the remaining interview questions b) to f), which aimed to identify contextual influences on the individual levels of practice, and to probe the tutors' perceptions of aspects of their practice.

While the cognitive dimension of writing was foregrounded in the tutors' responses, contextual influences on the students' writing featured less in the discussions. The questions relating to contextual influences, that is, the questions which asked about choice of genres for assessment tasks, links between undergraduate writing and professional writing, and the writing apprenticeship, seldom elicited responses which explicitly linked undergraduate writing to disciplinary discursive practices and the discourse community. The responses tended to emphasise the desired outcomes for the individual student, such as the development of reflective learning and critical analysis. This was particularly evident in the tutors' explanations for their choice of assignment genres and their changing expectations for students' writing. For example, the research report was seen as a *"way of moving theory into practice... a practice which involves reflecting and interpreting, and doing analysis through the*

theory". Similarly, the journal article review was seen to engage students in reading primary research and how knowledge is constructed, a process which in the words of one tutor was seen to assist students becoming *"critical consumers of research"*. Critical analysis also featured prominently in the tutors' descriptions of changing expectations in regards to the writing of higher year undergraduate students.

Critical analysis was described in Section 4.1 as a valued practice at both the institutional and disciplinary levels of practice, particularly for classroom applications of theory. From the interview data, however, it appears that the institutional level of practice rather than the academic discipline is a more significant contextual factor in framing the primary teacher students' writing. This conclusion is based on the tutors' tendency to frame critical analysis as a transferable 'life skill', the responses to the apprenticeship metaphor inquiry, and on the tutors' hesitation in making connections between professional disciplinary writing practices and the students' writing.

Another insight from the tutor interviews concerns disciplinary knowledge making practices. Through their choice of assignment genres and changing expectations regarding students' writing, the tutors attempt to introduce students to the ways in which theories and knowledge are constructed. Learning to view knowledge as constructed, and how it is constructed, is explained by most of the tutors as being crucial for the students in their teaching practice, in which the students are primarily *"consumers of research"*.

The final comment on the tutor interviews is to do with unpacking the concept of critical analysis. Useful insights into what constitutes analysis and critical analysis in writing occurred throughout the tutors' responses to the interview questions. In response to the first question on the role of assignment writing, Tutor Four commented on the need to evaluate theories and consider the implications for classroom practice. This response echoes aspects of critical analysis identified in the assessment criteria, that is, making connections, evaluating, and drawing conclusions. However, it is more elaborated in that 'making connections' refers to

making connections between theory and classroom practice, to 'evaluate and draw conclusions' likewise refers to implications for the students' classroom practice.

In response to the second question on choice of assignment genres, Tutors Four and Five commented that the purpose of the journal article review was to engage the students in primary research through reading journal articles and with disciplinary knowledge building practices. Again, these tutors emphasised the need for students to be critical, make links between theory and practice, and to evaluate research in relation to its application to the classroom. In response to the question on assessment, recurrent themes were the need for structure and argument, echoing the Faculty assessment criteria of "vigour in argument". It should be noted, however, that the concepts of argument and structure were not elaborated on by the tutors, suggesting that these concepts were considered to be shared knowledge between the researcher and the tutors. In regards to critical analysis and the final question on changing expectations of students' writing, Tutor Three emphasised the need for students to *draw threads and show tension*".

In summary, the tutors' comments on aspects of good writing, as well as the Faculty documents have been the means of establishing a provisional description of critical analysis in the writing of undergraduate trainee teachers. That is, aspects of critical analysis in writing include making connections between theory and practice, drawing links between theories, evaluating theories and research and considering implications for the classroom as well as arguing and reasoning.

The discussion now turns to the students' perceptions of valued discursive practices, their understandings of these practices and the main influences from their point of view on their writing and learning.

4.3 STUDENT INTERVIEWS

Interviews with a small number of volunteer students were conducted in the first and third year of the study. In the first year seven students were interviewed, while in the third year it was possible to interview only three of the original seven students. These interviews were recorded and transcribed, with the exception of two third year interviews, which were conducted via email. Table 4.2 identifies these students and shows the grades awarded for their assignments. Information on the students' backgrounds was gathered as part of the introductory "ice-breaker" question.

Table 4.1 Interview participants and a summary of their assignment grades

	March 1999 essay	June 1999 essay	Oct. 2000 essay	April 2001 article review	June 2001 essay
Student 1	P+	P+	*Withdrew from studies*		
Student 4	HD	HD	HD	D	HD
Student 6	D	HD	C+	HD	HD
Student 7	HD	HD	*Changed into the KBC stream*		
Student 9	D-	HD	C+	D	HD
Student 13	HD	D	D	C	C-
Student 14	P+	C-	C+	C	D-

4.3.1 Student Interviews Conducted in the First Year of the Study

As Table 4.1 shows, the students who volunteered to be interviewed were mostly high achieving students with five of the seven students achieving at least one High Distinction in the subjects which were the focus of this study. Students One and Fourteen, however, had struggled with their written assignments.

The interviews were conducted at the end of the first semester and were between twenty and thirty minutes in duration. As with the tutor interviews, these interviews were informal and open-ended. The students were provided with an outline of the interview questions. This outline is provided below:

Background question

1. *Do you think there are differences between your past writing experiences (e.g. at school, work) and what is expected of you now in your assignments at university?*

Main questions

2. *Did you have any problems doing your assignments in this subject?*

3. *If you think about the different kinds of input into how you wrote your assignments in this subject, what were the most important sources? For example:*
- *your tutor's advice*
- *guidelines in the Faculty Handbook*
- *your readings (textbooks, articles, lecture notes)*
- *writing guides*
- *others*

4. *What sort of writing do you think your tutors value?*

5. *Role of tutor's feedback on assignments: Did you find your tutor's comments on your assignments helpful?*

   If you found the comments helpful, in what ways have the comments helped you to write the second essay?

The purpose of the first question was to establish background information about the students with particular reference to their experiences of academic writing. All the students who participated in the interviews, with the exception of Student Nine, were mature-age students. Student One had only recently completed her Adult Basic Education certificate at an Institute of Technical and Further Education (TAFE). She was able to matriculate by successfully completing the university's Gateway[1] program. Student One described herself as a "stay-at-home mum" prior to her TAFE certificate. Student Fourteen had similarly entered university through the Gateway program; however she had worked as a data entry clerk prior to her university studies. Student Thirteen had returned to high school to complete her matriculation certificate, while Student Six had completed her matriculation certificate "twenty years ago". She had recently completed a TAFE Tertiary Preparation Certificate.

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[1] The Gateway program was an Access and Equity initiative of the university which has since been discontinued.

The remaining three students had only recently completed high school. Two of these students, Students Four and Seven had discontinued other studies to enroll in Teacher Education, while Student Nine had only completed her High School Certificate (the matriculation exam for high school students) the previous year. Student Nine held a tertiary scholarship, which is a competitive scholarship awarded on the basis of Higher School Certificate results.

The first question on any differences between writing at university and other types of educational writing was designed to elicit responses in which the students attempted to describe academic writing through comparison. Most of the students noticed differences between the types of writing required of them at university and other sorts of educational writing they had done either at TAFE colleges or at high school. Students Nine and Seven commented that academic writing involved more research, and Students Four and Nine noted the need to learn referencing conventions and *"quoting other people directly"* [Student 9]. The lower scoring students, Students One and Fourteen noted that there were vast differences between the types of educational writing they were used to and what was required of them at university:

> There's a big difference.
> Well, I mean when you write at school it's ...basically you're doing a lot of copying from books, whereas now it's gotta be your own ideas, and how ...they've got their own style, how they want you to write. They want you to analyse it, dissect it, and that's very difficult, very difficult. Very different from what you're used to. I mean the other students all had the same problems. [Student 14]

As with the responses to the first question, the responses to the second question on whether students experienced difficulties writing their assignments differed according to the grades the students received. The two lower scoring students affirmed that assignment writing caused them concern. Their explanations were as follows:

> Yes, I did [have difficulties]. I um found it really hard. [long pause]
> I didn't know what was required... I didn't know - it was one of my assignments that I didn't go into enough depth...
> The second one I went into too much depth. The first one I didn't cite enough references and the second one I cited too many. [Student 1]

> Yes, I left them right until the last minute. All of my assignments
> because I didn't have enough confidence to start on them. But I know
> now what I should've done was start, and then got help, and done it
> that way. Now I know better. [Student 14]

These students' anxiety about assignment writing is in contrast to the responses of
the higher scoring students who responded that they did not experience difficulties.
Two students however, elaborated on aspects of assignment writing. Student Three
pointed out that 'discuss' type assignment questions, particularly of positive and
negative features of a theory, were sometimes unbalanced: "*I had only one positive
and at least a mile of negatives, so I had to find something good about it*". This
unbalanced quality of some student Discussion texts is evident in the results of the
genre and generic structure section of this thesis. Furthermore, Student Nine
commented that it was challenging to use research from a range of sources, and not
to just rely on the textbook. In her words:

> There was so much information in that book, that you sorta felt like
> you were only reading other things to build up a reference list because
> it was just worded differently in other books.

Responses to the third question on whether the students consulted with others or
referred to writing guides maintained the division between the lower scoring and the
higher scoring students. The five higher scoring students drew on a range of
supporting resources. These included discussing their assignments with their peers,
showing drafts to tutors, showing drafts to TAFE teachers and college tutors, and
consulting the Faculty handbook. The students' mums featured in two of the
responses. For example:

> I hand it to her in the laundry and she reads it. Out loud. And the bad
> phrases that she doesn't like she keeps repeating. [Student 13]

On the other hand, it appears that the anxiety experienced by the two lower scoring
students prevented them from consulting with anyone. Student One consulted the
Faculty Handbook but found its guidelines on referencing confusing as they were not
consistent with her experience of referencing conventions in the discipline of
History. Student Fourteen was part of an informal group which discussed the

assignment however, she did not show her assignment to anyone. This student later approached her tutor for advice with the second assignment.

The fourth question: *What sort of writing do you think your tutors value?* drew a fairly homogeneous response. Five of the seven students stated that they were not sure what their tutors valued in writing. Their responses were punctuated with pauses, and in the case of the higher scoring students, laughter to hide their embarrassment at not being able to pinpoint what they thought their tutors valued in writing. Student Thirteen explained this situation as follows:

> I don't know. I haven't worked that out [laughs]. I think to get a lower mark would have been better to try and work that out, but getting the higher mark... um I don't know how to explain it. Um because I didn't do a lot wrong. Then I guess I must be doing it right. But I don't know what ... um they're obviously expecting what I'm doing, so ... you know what I mean? [Student 13]

Student One, on the other hand, admitted she did not know, and hazarded the following answer. Her pauses reinforce her sense of uncertainty:

> [long pause] I think they like a lot of analysis, um [pause]
> I think they would probably would like the kind of writing that shows that you can analyse and understand what it is you're writing about, rather than just writing to, to um... just to show them that what you're writing ... you understand.
>
> And that you can analyse what you're writing ... and tear it apart. [Student 1]

Students Six and Seven responded that they considered tutors to value writing that was based on research, and they also concluded that they thought tutors were looking for the students' opinions in their writing. While Student Six confidently answered that these were the aspects that tutors valued, she was less clear on how 'providing an opinion' could be realised in successful academic writing. As this student's response below shows, there was considerable uncertainty whether the first person pronoun could be included in her text as a means of realising the student's opinion in her writing.

[talking about an overheard discussion between her tutor and another student]

[tutor] read hers then she said something about you haven't got enough personal opinions, and um [student] sort of said to her that I understood that I weren't supposed to put personal opinions in there. And she said you can put opinions in there as long as they're backed up. Then [tutor] said to her you're allowed to write 'I' in there and what have you. But not what I was told. I was told no way, no way. And um, and um I was put off. I mean she read my essay and said that it sounds fine to me. And um words that she was saying to the other girl. Like try and put your opinion in there. But I couldn't do it. I couldn't put the I's and we's in there. I remember writing that first essay and having such difficulty getting all those I's and we's out, and then to put em back in was um harder. And so I decided no way. I just wasn't having them in.

In response to the final question on marker commentary all the students responded that they had read their tutors' comments on their assignments and considered these responses when writing their next essay.

4.3.2 Student Interviews Conducted in the Third Year of the Study

In the third year of the study interviews were conducted with three of the original seven students. These students are identified in section 4.3 as Students Four, Nine, and Thirteen. The two lower scoring students were unavailable as one had discontinued her studies, while Student Fourteen could not be contacted. The interviews with Students Nine and Thirteen were conducted by email, while the interview with Student Four was recorded and transcribed.

The third year interviews were designed as a follow up to the first year interviews, as well as a complement to the tutor interviews. The interview questions were as follows:

1. *What role do you see assignment writing playing in your learning?*

2. *Do you think your writing has developed over the course of the three years? If so, in what ways?*

3. *As you progress through your teaching degree there is more emphasis on students engaging with primary research when they write assignments. For*

example, the journal article review assignment this year required students to read journal articles. Why do you think there has been this emphasis on undergraduate students engaging with primary research?

4. *Do you still find your tutors' written feedback on your assignments helpful? If so, in what ways?*

5. *When you were in first year, I asked you what you thought tutors were looking for in your assignments. Now that you are in third year, do you have a clearer sense of your tutors' expectations when you write an assignment?*

6. *Can you describe for me what you think tutors are looking for in students' writing? Have you noticed a change in the tutors' expectations?*

Question one on the role of assignment writing for learning elicited responses that acknowledged the role of writing in the students' learning:

> I think assignment writing is very important as it forces you to read widely and clarify and communicate your ideas. Assignments force you to learn as you write them because you become engaged with the material as you manipulate it and delve into the issues involved. [Student 9]

> I see assignment writing as a way to really deeply think about what you are supposed to know, and to analyse and synthesise this knowledge through research, writing, drafting, editing etc. Writing helps to compound the ideas and make sense of the often quite esoteric information, which is delivered in the most "un-hands-on" manner possible. [Student 4]

The second question on students' perceptions of their writing development drew mixed responses. Student Thirteen commented that her writing had definitely improved and that she had a greater sense of the tutors' expectations, even though her grades may have not necessarily improved. Student Nine likewise felt that her writing had improved; however, she felt that this was not particularly noticeable in the assignments collected for the subjects which were the focus of this study. Student Four, on the other hand, felt that there had not been any improvement, but that she had maintained a standard which she had achieved in first year. Furthermore, she considered her writing to have lost much of its originality, and that her academic writing was not really her own:

> No, I don't particularly think my essay writing has developed over the three years. In first year, my tutor made his and basically academics' expectations extremely clear to me, and I achieved success in those first assignments. Accordingly, I have continued to complete my essays in this fashion, and have continued my achievement of good marks. I don't believe my vocabulary or sentence structure has developed over the years. If anything, I probably feel that my writing has begun to lose some of the originality and style that I had developed during my high school years, when the emphasis was on personal opinion, substantiated through interpretation of the text (i.e. English). Over the three years, I have become increasingly reliant on academic works to structure and complete my essays, and therefore my essays have lost some of what made them 'mine'. I mean, I still prefer my high school essays on, for example, Hamlet, to just about any of my essays from uni. They were, in my opinion, easier to read, and carried a greater sense of the person writing them than do my essays from uni. ...[Student 4]

The responses to the question on the reasons for undergraduate students engaging with primary research show parallels with several of the tutors' reasons for requiring students to read primary research. Two of the students made links between theory and practice, and considered implications for the classroom.

> Research is so relevant to teachers. I need to look to research to help solve problems in my class and to be a more effective teacher. I also need to read the research critically so that I use it appropriately. [Student 9]

> I think they want us to be aware of the diversity of children out there, the theory covers what to do with all types of students but the journal articles actually provide real life examples and solutions of these situations. [Student 14]

Student Four on the other hand saw the journal article review as a form of induction into the discursive practices of the discourse community, not as a consumer of research but as a participant. Reading primary research was considered by this student as a means of becoming accustomed to the format and the "lingo" of the research article.

> I think in third year there's a definite 'push' to encourage us to think of ourselves as researchers and reflective practitioners, and to encourage us to think of doing Honours. I guess by making us use research for our assignments we become accustomed to the format, the lingo, the subject matter. It doesn't seem out of our reach then.

The next question was concerned with marker feedback. The three students responded that they always took their tutors' written feedback into account, and that they found it helpful in their writing development. The final two questions were concerned to probe the students' understanding of discursive practices in the discipline. These last questions are considered together as there is some overlap in the students' responses.

4. *Now that you are in third year, do you have a clearer sense of your tutors' expectations when you write an assignment.*

5. *Can you describe what you think you tutors are looking for in students' writing? Have you noticed a change in their expectations?*

Students Nine and Fourteen commented that they did have a clearer idea of their tutors' expectations, with Student Fourteen elaborating as follows:

> I think in first year I felt that it was more about what the theory was about, now in third year I know that the lecturers I have had really want you to know the theory but have your own opinion on each theory and they really want you to write about your opinion of the theory. [Student 14]

Student Nine commented that she thought that tutors were looking for well thought out arguments and careful proofreading. These students also stated that they felt there had not been a change in lecturers' expectations as *"tutors have always expected a high quality of writing"* [Student 14]. Student Four, on the other hand, reiterated her comment from first year that she did not have a very clear idea of the tutors' expectations. In her response she also revisited her earlier comment on the restrictive nature of academic writing. These aspects of her comments are highlighted:

> No, I can't say that I do. Now we're in third year, more of the assignments are framed in much looser terms. In first year, they had a sense of being prescribed, and there was always a chance to clarify, and support was offered to all students within the context of the class. As we've got older, that support has been reduced, as it should be. However, with that reduction in support has come a reduction in the structure of the questions, but this has not created a greater sense of freedom or self-expression in the assignments. I still feel under the constraint of having to

> back up everything said with the opinion of an academic, and now have
> to seek further afield to do this.
>
> ...
>
> Tutors want clear writing, with correct grammar and spelling (however, I
> don't think they place enough emphasis on this as they should,
> considering we're going to be teaching children how to spell and write
> correctly!). I believe they want a clear argument, developed through the
> opinions and reasonings of academics, and referenced appropriately.
> [Student 4]

4.3.3 Discussion of the Student Interviews

A significant dimension of the students' responses is the differences between the responses of the higher scoring students and the responses of the lower scoring students. The different requirements of academic writing, such as the need to analyse, support claims with evidence, and learn citation conventions, were of little cause for concern for the high scoring students. However, for the lower scoring students these unfamiliar practices were a cause of anxiety and confusion, and indeed, seemed to hinder these students in seeking out assistance with their writing. The differences in the students' orientation to the requirements of academic writing can also be commented on in terms of the students' educational and social background. The two lower scoring students, Students One and Fourteen, had entered university through the university's Gateway program, a program to assist mature-age students who had not completed their secondary schooling. Background information provided by these students suggests that their social background was working class. Students Six and Thirteen were also mature aged students, and had recently completed a course in order to matriculate. Details on Student Six's background were not available, however; Student Thirteen's mother was an English teacher who had played a role in this student's assignment preparation. The remaining students' social background appeared to be more middle class professional with students mentioning parents' who had likewise held tertiary teaching scholarships or who were teachers. The findings on the students' orientation to academic writing correlated with their educational and social backgrounds are evidence in support of the position argued by Bernstein (1990), Hasan (1996), Bourdieau & Passeron (1990), and Corson (1985). This position based on their

research findings is that students from middle class backgrounds are more likely to successfully engage with the 'uncommonsense' nature of educational discourses as they share the same semantic orientation.

The students' responses to the question on their tutors' expectations make the following inventory of aspects possible. According to the students, their tutors value the following aspects in their writing: analysis; *"your own ideas"* that is, an informed opinion; accurate citation practices; a clear argument; writing that is based on research; and research that draws on a wide range of sources. These descriptions of valued aspects of academic writing were reinforced in the third year responses, with the addition of Student Four's comment that tutors want arguments *"developed through the opinions and reasonings of academics"*. The third year responses also mentioned that students needed to make connections between theory and practice; however there was less emphasis placed on this aspect by the students. It also should be pointed out that a feature of the students' responses to this question was uncertainty. Despite the participants' awareness of the distinctive nature of academic writing, the majority of the students were unable to confidently describe what they considered their tutors valued. There was a sense of trial and error in the students' approach to their writing tasks:

> I guess I must be doing it right. But I don't know what...um they're obviously expecting what I'm doing, so ...you know what I mean? [Student 13]

There was also a sense that while students could name desirable aspects of academic writing, some students were unsure how aspects such as opinion and analysis should be realised in writing.

These findings on the uncertainty of students about aspects of academic writing need to be considered with the findings on the resources students drew on when preparing their assignments. All of the participants were aware of the Faculty Handbook, which attempted to make explicit the writing requirements of the Faculty. Furthermore, most participants noted that their tutors had attempted to explain the writing task and the requirements prior to the assignment submission date. It also

needs to be pointed out that the majority of students participating in these interviews were High Distinction scoring students. No doubt interviews with more low scoring students would have reinforced this impression of uncertainty about writing requirements. These findings have important implications for tutor and faculty initiatives to make explicit to students the expected and valued discursive writing practices of the discipline. Despite the Faculty's and the tutors' attempts, the valued writing practices of the discipline remained for the majority of the participants intangible and hazy concepts.

One reason for this situation may be due to the students' incomplete understandings and misconceptions about two influential factors: the multi-layered context in which they were writing, and ways in which disciplinary knowledge is constructed. The students seemed to have only the vaguest concept of the context in which they were writing: the 'they' in Student Fourteen's comment, *"they've got their own style"*, could refer to individual tutors, collectively to the Faculty, or to the broader institutional context of the university. In the first year responses students seemed unaware of any difference in status and purpose between pedagogic texts, such as their introductory textbook, and primary research:

> there was so much information in that [text]book, that you sorta felt
> like you were only reading things to build up a reference list because
> it was just worded differently in other books [Student Nine]

Student Nine's first year comment shows, not surprisingly, that the student had little awareness of the textbook as recontextualised, static knowledge, an issue which is considered in the following chapter. There also seemed to be a sense of frustration about disciplinary knowledge building practices: for example, *"but considering the fact that everybody [the theorists] is in conflict..."* [Student 6]; and Student Four's comment: *"I still feel under the constraint of having to back up everything said with the opinion of an academic"*. These overlapping areas of disciplinary knowledge building practices and the contexts in which students were writing seem important starting points from which tutors and Faculty writing guidelines can begin to explore with students the reasons for and purpose of some of the discursive practices which are expected of students.

Student Four's comment on the restrictive nature of academic writing echoes the findings of Lillis (1997) and Cadman (1997), who found that their non-English speaking background students experienced academic writing as constrictive, and raised questions of identity for the students. While Student Four did not frame her response to academic writing as a member of a marginalised group (for example, as a migrant, as an indigenous student), she articulated a loss of what Ivanic (1997) refers to as her 'discoursal identity'. That is:

> I probably feel that my writing has begun to lose some of the originality and style that I had developed during my high school years, when the emphasis was on personal opinion, substantiated through interpretation of the text (i.e. English). Over the three years, I have become increasingly reliant on academic works to structure and complete my essays, and therefore my essays have lost some of what made them 'mine'. I mean, I still prefer my high school essays on, for example, Hamlet, to just about any of my essays from uni. They were, in my opinion, easier to read, and carried a greater sense of the person writing them than do my essays from uni. ...[Student 4]

This student's comment would no doubt cause her third year tutor some disquiet, as this tutor encouraged students to engage with disciplinary knowledge, and who was most definitely interested in the student's opinion on theoretical issues and their application to the classroom. Again, one way to address the student's concerns is to provide a disciplinary context for the students' writing, and to consider the knowledge building practices of the discipline. This is not to discount the student's experience of academic writing as restrictive and resulting in a reduction in her creativity; however, it provides one means of both understanding such practices as well as exploring alternatives.

The final comment on the students' interviews concerns the ways in which students learn to write in a disciplinary context. The majority of students interviewed were 'pro-active' and resourceful when preparing their assignments. The successful students were resourceful in that they confirmed the quality and direction of their research with either an internal or external source. Internal support included consultations with tutors and the Faculty handbook, while external support ranged

from college tutors to the advice of family, friends and former teachers. However, the least successful students did not draw on such resources. It appears that this reticence was due to anxiety. This seems an important issue for the Faculty to address, as while the tutors in this study readily made themselves available for consultations with students, the most needy student did not avail herself of this support, probably due to anxiety and lack of confidence. This student discontinued her studies in the second year. It is also worth noting that the students participating in this study considered their tutors' written feedback on their assignments as an important source of guidance. All of the students paid attention to their tutors' feedback and considered it for future assignments. The role of the tutors' written feedback for the students' socialisation into the discursive practices of the discipline is the focus of the next section.

4.4 MARKER COMMENTARY ON STUDENT TEXTS

This section addresses one of the questions posed at the beginning of this chapter: To what extent do the tutors try to influence the students in any socialisation process? The focus is identifying in what ways marker feedback attempts to induct students into the discursive practices of the discipline. Since the data for this mini-study into the role of marker commentary were first year essays, it was assumed that the tutors would focus on shunting students from the commonsense, everyday world of their experiences of teaching and learning, to the more 'uncommonsense' ways of meaning intrinsic to the disciplines. Therefore one hypothesis was that tutors would react negatively to aspects of commonsense experiences of the world in the students' writing, such as everyday language, anecdotes, spoken forms of language, and strong subjective expressions of opinion.

4.4.1 Description of the Data

The main data used to explore the socialising role of marker feedback were marker commentary on forty-four first year essays written in March 1999, and forty-four essays written by the same students in June 1999. The texts of the remaining two

students of the larger cohort were not included as the pages with the grade and marker commentary from the students' texts were not available. The March 1999 assignment was the cohort's first assignment in their university studies in the Faculty of Education. The marking of the cohort's essays was shared between four tutors, two of whom are senior academics. The other tutors had extensive teaching experience in tertiary education. All of the tutors were aware of the researcher's intention to collect and copy a selection of the students' essays after they had been marked; however, they did not know which students were participating in the study.

The grades awarded for these texts are given in Table 4.2

Table 4.2 Distribution of grades in the students' assignments

Grade	March 1999 Essay	June 1999 Essay
Total Pass	10	8
Total Credit	17	13
Total Distinction	13	13
Total High Distinction	4	10
Total Assignments	**44**	**44**

4.4.2 Description of the Analytical Framework

The analysis of the marker feedback distinguished between tutors' marginal comments and their summarising comments. The designation 'marginal' refers to annotations which tutors added in the margins and text of the student assignments. 'Summarising' refers to concluding comments accompanying the grade at the end of the student assignments. The tutors involved in this study wrote marginal comments as well as at least one paragraph of concluding comments. One tutor consistently attached an extra page of three short typed paragraphs commenting on aspects of the students' work.

Marker commentary that attempts to socialise students towards the discursive practices of the disciplines is likely to attend to a range of lexical and grammatical choices across several dimensions. One dimension is the representational aspect of language: how the students used language to represent, define, classify, establish causal relations, and so on. Another dimension is the interpersonal: that is, how

students used language to interact with their reader, to negotiate meanings, evaluations, and so on. A third dimension is the way the students used language to organise their meanings, their arguments, propositions etc. into texts. In order to distinguish the types of meanings markers attend to in their comments, the analysis was informed by Halliday's metafunctional view of language. The tutors' marginal comments were analysed according to the types of meanings (i.e. experiential, interpersonal, textual) the markers responded to in the students' texts. Marker commentary which attended to punctuation features and spelling was not included in the analysis, nor were broader comments on the issues covered or not covered in the students' essays.

i) *Experiential Meanings*

Preliminary analysis of marginal marker commentary attending to experiential meaning in the student assignments pointed to two types of intervention. These interventions were categorised as either **replacement** or **augmentation**[1]. Replacement refers to the replacement of one term for another which has a more technical or accurate meaning in the discipline. Replacement includes the highlighting of an inaccurate term or non-specialist/technical term. Augmentation refers to the expansion of nominal groups and verbal groups for greater precision. This often includes the addition of classifying information in the nominal group: for example, *Piagetian theories.*

Examples of marker commentary on the experiential dimension of the student writing are as follows. Note, the tutors' highlighting of inaccurate terms is shown below by underlining in the text excerpt. Additional comments made by the tutors are in bold script.

---

[1] Initially the terms chosen for categorisation were **substitution** and **expansion**. However, as both terms are technical terms in systemic theory (substitution is a grammatical resource in cohesion, while expansion is the superordinate category for types of logical relations), the abstractions **replacement** and **augmentation** were adopted.

- REPLACEMENT:

    cultural, social and human influences

    children at different ages have different capabilities; **demonstrate different**

    are intertwined to produce child development; **to enhance child development**

    classical conditioning showed; **clearly demonstrated**

    developmentalists; **theorists**

    theory; **argument**

    our scientific make-up; **you mean biological?**

    Distinguish between philosophers (Rousseau and Locke) and psychologists (Skinner, Piaget, Vygotsky) – general ideas vs particular ideas in education

- AUGMENTATION

    some forms of **cognitive** *maturation*

    Piagetian *theories*

    according to research statistics, *fraternal twins relatedness*

    the child can be moulded **by the environment**

    theorists have proven (**? too general! Identify!** *)*

    make believe **play** *was also a* **key** *factor*

    problems a child may have **within the school environment**

    physical **and cognitive** *traits*

ii)   *Interpersonal Meanings*

Analysis of marginal marker comments focussing on this function of language suggested four types of intervention. These were categorised as i) modifications of high modality to a lower modality, ii) modifications of strong expressions of thinking and feeling, iii) modifications to the use of the personal pronoun, iv) and highlighting everyday language or informal language.

- MODALITY

    otherwise a negative environment will be ; **could be**

- EXPRESSIONS OF THINKING, FEELING AND ATTITUDE

  we therefore need to realise; it is therefore essential

  I would say about 35%;

  disagree completely

  may differ extremely; considerably

- PERSONAL PRONOUN

  we can; avoid personal pronouns

  our behaviour; avoid personal pronouns

- EVERYDAY AND INFORMAL LANGUAGE

  avoid the use of contractions

  evidence which backs; supports

  these days more and more people are coming to believe; today much greater

  credence is attributed to

  us humans

iii)   *Textual Meanings*

Analysis of marginal marker commentary attending to textual meanings in the student essays suggested four concerns: i) paragraph structure ii) cohesive features such as reference and conjunction, and iii) 'spoken' patterns of discourse. Marginal commentary on the intertextual aspect of the disciplinary discourse, that is iv) referencing of sources and the technicalities of referencing, was also included in this category.

- PARAGRAPH STRUCTURE

  paragraph structure

  avoid points in an essay – and no one sentence paragraphs

  some attention to logical structure required

- COHESIVE FEATURES

  contrary to the theories mentioned above; **contrary to <u>these</u> theories** (grammatical reference)

  One example does not prove the rule; **conversely** (conjunction)

- SPOKEN PATTERNS OF DISCOURSE

  Watson and Bandura theories are important issues, environment does shape child development but it is only half of the picture hereditary is also of equal importance; **Watson's and Bandura's theories raise important issues, namely that environment does shape child development. However heredity is also of equal importance.**

  sentencing! (clause structure of spoken language patterns)

- INTERTEXTUAL REQUIREMENTS

  you must link the quote with the text

  Piaget stated; **Reference?** (lack of references)

  Weiten cited in Berk

It should be noted that grammatical realisations of experiential, interpersonal, and textual meanings are not discrete grammatical elements, rather they are "interwoven in the fabric of the discourse" (Halliday & Hasan 1985: 23). This means that the same word or phrase can contribute to more than one functional meaning.

Occurrences of marginal comments relating to experiential features, interpersonal features or textual features of the students' writing were counted in each essay. In the initial data analysis, the type of commentary for each language function was distinguished and counted according to the identified subcategories of each metafunction. However, analysis of the data revealed that the amount of marker feedback for many subcategories was insignificant. For this reason a total of the number of comments per essay for experiential features, interpersonal features, or textual features was established. Marker variability was taken into consideration by

grouping the essays into tutor groups. This procedure was followed for the second essay. In addition, the tutors included at least a paragraph of summative comments on each students' essays. These summative comments were analysed qualitatively and compared to the quantitative marginal commentary findings. The discussion of the results includes excerpts from the tutors' summative comments.

4.4.3   Results and Discussion of the Marker Commentary

Markers' Marginal Comments

For the March 1999 essay, the average number of comments for each tutor per essay for the three functions of language, that is, experiential, interpersonal and textual, is given in Figure 4.1. For the June 1999 essay, the average number of comments per tutor for each of the three language functions is given in Figure 4.2.

The results show that tutors made comments across the three areas of meaning, textual, experiential and interpersonal. However, the average amount of marker feedback focussing on experiential, interpersonal or textual features of the student writing was small. In the March 1999 essays which were approximately 1500 words in length, the highest amount of comments per essay was made by Tutor One. These comments focussed on experiential features with an average of 4.1 comments per essay (Figure 4.1). For the second essay which was approximately 2000 words in length, the highest amount of comments was likewise made by Tutor One. Again experiential features attracted the most attention with an average of 8.7 comments per essay (Figure 4.2). As the number of comments focussing on experiential features was small, the results did not distinguish between comments which substituted the students' experiential meanings with the tutors' alternatives, or between the tutors' comments which expanded on aspects of the students' experiential meanings.
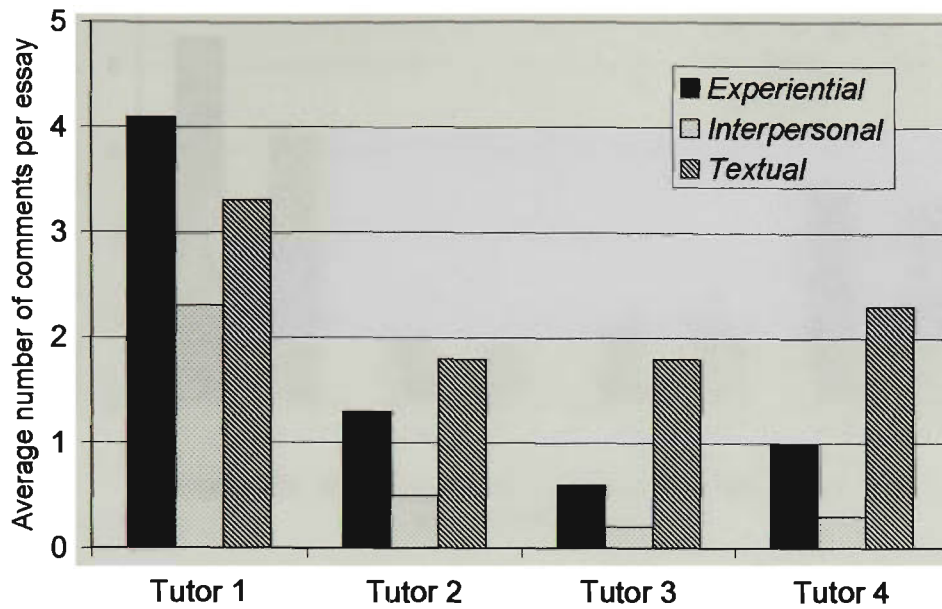
Figure 4.1: Marker feedback on discursive practices of the discipline
(Essay 1)

Tutor One's greater attention to experiential features of the student writing for essay one and essay two is in contrast to the other three tutors' greater attention to textual features, particularly intertextual ones, in essay one. Intertextual features refers to the citation of sources such as the need to provide citations. It also refers to the technicalities of referencing, for example, the inclusion of name and date, and the position of citation details. This result is slightly different for essay two (Figure 4.2), in which experiential features and textual features receive approximately the same amount of attention. For both essays, commentary on interpersonal features of the students' writing received least attention. This is a finding which contradicts the hypothesis stated at the beginning of this section, namely that tutors would be likely to target 'commonsense' views of disciplinary knowledge which would be likely to be realised through everyday language, and congruent expressions of opinions. Whether these aspects were included in the students' texts is taken up in the next section on the tutors' summative comments.
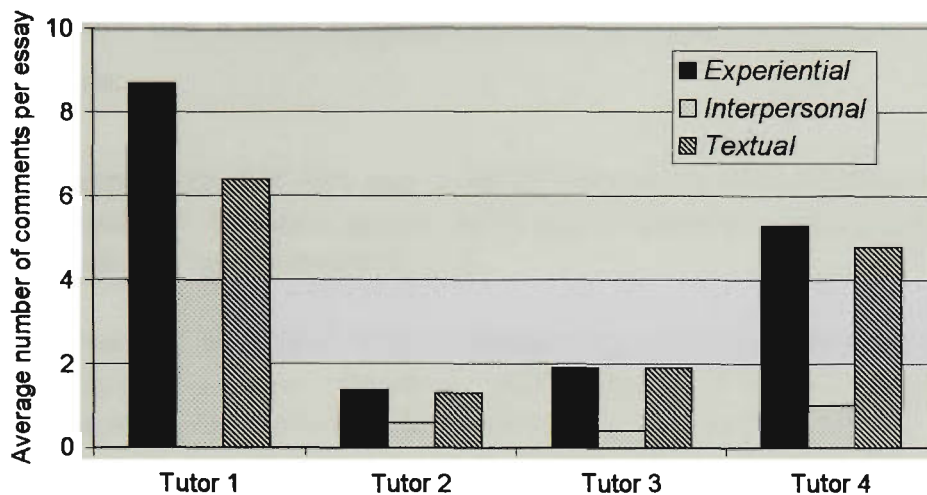
Figure 4.2: Marker feedback on discursive practices of the discipline (Essay 2)

Markers' Summative Comments

The results suggest that marker feedback in the form of marginal comments on student assignments does play a role in attempting to apprentice students to the discursive practices of the discipline, albeit a small one. As well as marginal comments, all of the tutors included at least a paragraph of summative comments on the students' essays. Summative comments which functioned to induct students into the disciplinary discourse by Tutors One, Three and Four tended to reiterate the comments they had made throughout the students' essays. However, Tutor Two's summative comments included a number of comments which acknowledged and allowed language features which would not be considered typical of the disciplinary discourse for mature members of the discourse community. These types of comments appeared on the first essay set; however they were absent from the second set. This tutor's comments related in particular to interpersonal meanings. For example:

> You successfully combine a good academic style in an emotional and artistic way to express your ideas and feelings. ... Your approach to the task shows a marked degree of originality and insight. (grade awarded, HD)

> You successfully combine a good academic style with your own personal style of expressing your ideas and views (grade awarded, D)

Some of Tutor Two's comments; however, acknowledged an atypical writing style but suggested that a more academic style would result in more successful writing. For example:

> I appreciate that you use a lot of your own words rather than direct quotations, however your style should be more comprehensive and more academic (grade awarded, C-)

> However, sometimes your interpretation and presentation of Piaget and Vygotsky's ideas obviously suffer from an oversimplification and distortion for the sake of belletristic style. (grade awarded, D)

In the second set of essays, only Tutor Four made a summative comment which acknowledged a personal style not typical of academic discourse:

> Your ideas are passionately argued, ... I don't have a problem with the personalisation of your comments but you must refer to evidence to support your ideas. (grade awarded, P)

The presence of these inclusive types of comments focussing on interpersonal meanings shows that in the Faculty that was the site of this study, a personal, subjective style of writing is permissible for novice writers. Furthermore, recurring interpersonal features which are not typical of the mature discourse, and which were not underlined or crossed out by the tutors, occurred in slightly less than half of the essays in set one (17 essays from 44), and approximately one third in set two (15 essays from 44). In some instances these interpersonal features were positively acknowledged with a tick by the tutor. Interpersonal features are highlighted in the following examples:

> For example, the theories of Case 1992, Fischer & Farrer 1987, argue that competencies develop with age which extend over time and depend on both biological development and experiences with different types of knowledge and tasks (Berk L, 1997). **Personally this is a theory which I really believe in** (grade awarded, HD-)

> In my future work, hopefully as a primary school teacher, the nature versus nurture debate **will affect me greatly**. I will have to choose to which side of the scale I fall and teach the children accordingly. Do I have to nurture them and fill their blank slate, or do I let them go, as their intelligence levels are predetermined? **I am yet to completely**

> **decide**, but my further studies should aid this decision (grade awarded, C)

In regards to any correlation between grades awarded and extent of atypical language features in the student writing, no clear pattern was evident in the data summarised in Figures 4.1 and 4.2. However, one tendency which is evident from extensive reading of both sets of essays is that tutors value students' application of child development theories to their own environments. This is evident in the tutors' ticking or writing *'good'* next to passages in the students' assignments which linked theory to the students' lived experiences. This transferal of theory to the students' environment is evident in essays from a range of grades. Through the applications of child development theories to the students' teaching situations and their own environments, the students began to engage as novice members of the discipline of education. This form of disciplinary engagement seems highly valued by the tutors.

Providing marker feedback allows markers to frame the discursive practices of the discipline for novice students. Spinks' (1998) study into marker commentary on undergraduate psychology students' assignments found that marker commentary did play a role in "the process of inducting the student into the ways of knowing, and thus the ways of writing considered appropriate in psychology" (p.199). This study of marker feedback on the first year students' essays similarly found that marker feedback did attempt to socialise students into the discursive practices of the discipline, albeit to a small extent. The findings from this study show that marker feedback attended more to experiential and textual meanings, focussing on how the specialist knowledge of the discipline was constructed. Interpersonal meanings received least attention, and indeed personal evaluations and applications of theories are highly valued. This suggests that tutors encourage students to identify themselves as future practitioners.

4.5   DISCUSSION AND CONCLUSIONS

In the closing section of this chapter, the three broad questions informing this exploration into the disciplinary and institutional context are addressed from the perspectives of the student and tutor interviews, the marker commentary and to a lesser extent the departmental documentation.

The first question was concerned to identify the valued writing practices and learning processes of the discipline and university. Institutional and disciplinary level documentation as well as the tutor interviews suggest that the overlapping concepts of critical analysis, analysis and critical thinking are highly valued. In the Faculty of Education it appears from the tutors' comments and Faculty documents that critical analysis is used as a super-ordinate term to refer to analytical processes in writing. These analytical processes consist of, for example, making connections between theory and classroom practice, drawing links between theories, evaluating theories and research, and considering implications of research and theories for the classroom. The students identified the valued writing practices of the Faculty as analysis, an informed opinion, strong argumentation, and drawing on a broad range of research. The third year students also commented on the requirement to make links between theory and classroom practice. While there are parallels between these results, the tutors' responses are, not surprisingly, more precise in what these processes in writing involve. The tutors also emphasised the need for accuracy in spelling, punctuation and adherence to the conventions of the grammar of written English; however, this aspect was conversely not foregrounded in the students' responses.

It is notable that both the tutors and the three third year interviewees considered writing as an important process for learning. Tutor Five's comments on the role of writing for analysing issues and developing an argument are echoed by Student Nine's comment:

> Assignments force you to learn as you write them because you become more engaged with the material as you manipulate it and delve into the issues involved.

While the students were in agreement on the importance of writing for learning, academic writing as a discursive practice is not well understood by the participants, even though the majority of the participants received high marks for their assignments. This suggests that, despite the efforts of the tutors, more work needs to be done in assisting students to understand how the valued writing practices of the discipline and university are realised in writing.

It is also worth noting that to some extent, the students experienced the discursive practices required by their tutors as prescriptive and restrictive. Comments such as *"they've got their own style how they want you to write"*, were echoed by the third year student who noted that her academic writing lacked any originality, or carried any sense of her identity.

The second and third questions were concerned with the relation of the students to the discourse community. These questions asked:

ii. What is the relation of the students' writing and knowledge building practices to the mature discourse community of the discipline? Is the concept of discourse community an accurate one for the trainee teachers?

iii. Do the students' tutors attempt to influence the students in any socialisation process?

The findings from the tutor interview data suggest that the tutors rarely frame the students' writing from the contextual perspective of the discourse community. The questions relating to contextual influences, such as choice of genres, links between undergraduate and writing and professional academic writing, and the apprenticeship metaphor drew responses which emphasised outcomes for the individual student, such as the development of reflective learning and critical analysis. Furthermore, the

results from the marker commentary study suggest that marker commentary only appears to play a small role in socialising students to the discursive practices of the discipline.

The students' sense of the discursive practices as restrictive and prescriptive, noted above, is in contrast to the findings from the marker commentary. One explanation for this discrepancy may be due to the nature of the research design for this dimension of the study. That is, the student interview data was qualitative in nature, while the marker commentary data was concerned with amounts and distribution of commentary. In interpreting the amount of marker intervention as small, it may be necessary to foreground that this interpretation is the researcher's and not the students' interpretation. From the students' perspective, any tutor commentary on their writing style and language choices could well be interpreted as prescriptive. Students may react to the discourse as restrictive because the advice given to the students is prescriptive in nature. Rather than negotiating and explaining the context that shapes the writing practices, students are commanded, obliged, criticised for their stylistic choices, and so on. For example (examples are from the marker feedback):

Imperative /Command

theorists have proven *(? too general!* ***Identify!)***
avoid personal pronouns
avoid the use of contractions

Strong obligation

I appreciate that you use a lot of your own words rather than direct quotations, however your style ***should be*** *more comprehensive and more academic*

Style

However, sometimes your interpretation and presentation of Piaget and Vygotsky's ideas ***obviously suffer from an oversimplification and distortion for the sake of belletristic style***

The tutors' comments were made in the context of teacher to student advising on writing practices in the discipline. What is absent from these comments, however, is an explanation of why the requirements are valued. This is not to suggest that the tutors need to write even lengthier commentary. However, without an understanding of the disciplinary context and the way it shapes disciplinary knowledge, comments such as *"your style should be more academic"* are likely to have little meaning for the student, other than a set of rules to which need to be adhered.

The results from the diverse sets of data suggest that the participants in this study do not make explicit connections between the students' learning, disciplinary discursive practices, and the wider disciplinary context. Nor do the students seem to have any tangible sense of that disciplinary context as a dynamic social environment, in which negotiating meanings is an intrinsic discursive practice and that disciplinary knowledge is contested and contestable knowledge. Making such connections would assist the tutors in explaining the discursive practices of the discipline, rather than merely prescribing them. It may also help students to identify areas in which they can position themselves more confidently as participants within that context, and through this process to experience the discourse as less restrictive. While marker commentary is only one aspect of students' socialisation and learning in a disciplinary context, it could prove a most tangible area from which tutors can explore with their students the relation between language choices, the disciplinary context and learning.

To return to the model of elements of academic discourse communities (see Chapter 1, Figure 1), in the disciplinary context of this study there appears from the interview data a sharp division between producers and consumers of disciplinary knowledge. From the tutors' perspective it appears inaccurate to describe the pre-service teachers as novice members of the disciplinary community. Instead, consumers of disciplinary knowledge may be a more accurate description. None of the tutors considered the metaphor of apprenticeship as a suitable one to characterise the process of students' learning the discursive practices of the discipline, echoing Berkenkotter and Huckin's (1995) assertion that the apprenticeship metaphor does not accurately describe the ways undergraduate students experience disciplinary

discourses. Furthermore, it is only in third year that one student identifies students as researchers:

> *I think that in third year there's a definite 'push' to encourage us to think of ourselves as researchers and reflective practitioners, ... I guess by making us use research for our assignments we become accustomed to the format, the lingo, the subject matter.* [Student 4]

In the light of these findings on the students' relation to the disciplinary context and discourse community a modified model of elements of a discourse community is shown in Figure 4.3. This model is considered to more accurately reflect the relation of the undergraduate primary teacher education students to their discipline of education.
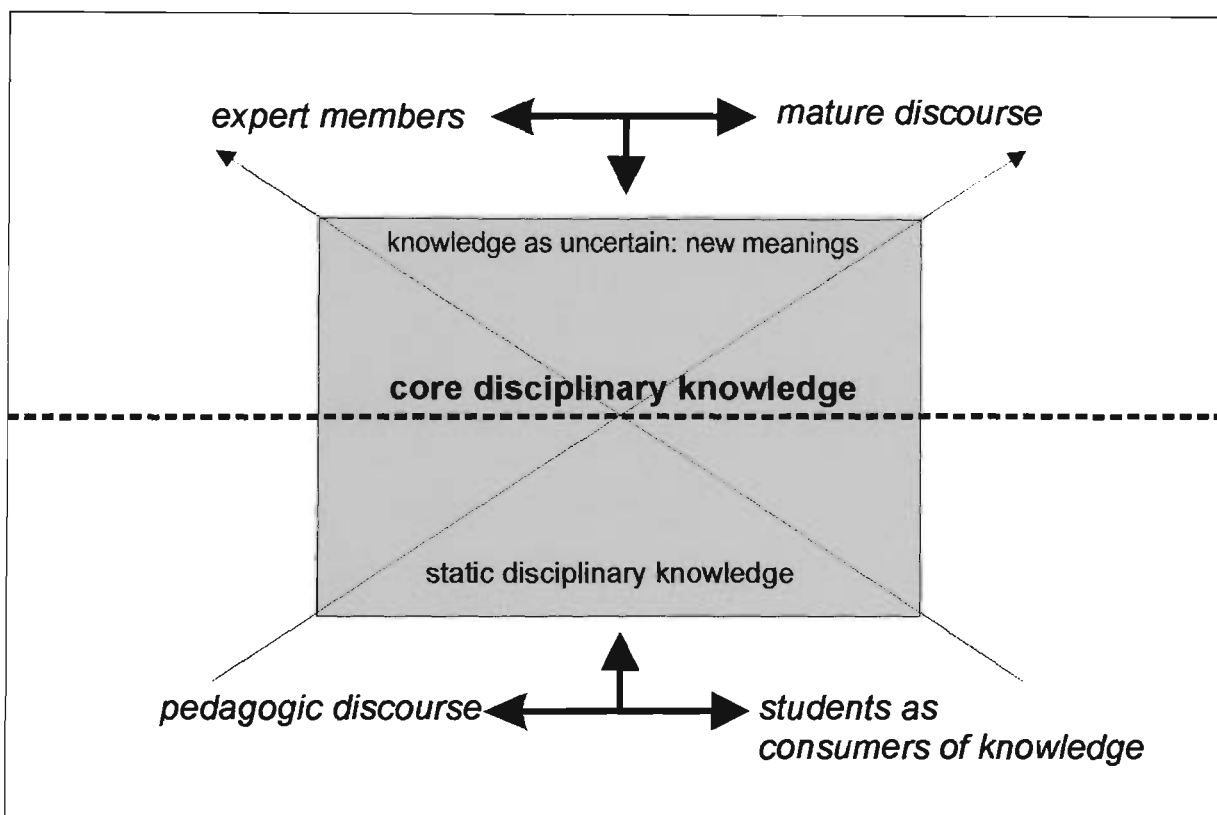
Figure 4.3 The relation of the primary teacher students to their discourse community

4.6 SUMMARY

This chapter has provided a description of the disciplinary and institutional environment in which the trainee teachers were writing. It has identified valued writing practices in these contexts by drawing on interviews with tutors participating in the study and documentation from the Faculty and University. Key elements in the discussion have been critical analysis, conceptions of disciplinary knowledge, and the status of undergraduate students and their writing in an academic discourse community. The following chapter focusses on other aspects of the disciplinary context: the pedagogic discourse as it is instantiated in the students' introductory textbook.

CHAPTER 5

THE PEDAGOGIC DISCOURSE AND DISCIPLINARY LEARNING

This chapter continues the discussion of the contextual influences that shape the pre-service teachers' learning. While the previous chapter was concerned with the participants' accounts of discursive practices and the tutors' influence on the students' learning through writing, this chapter focusses on one discourse of learning: the student's introductory textbook. This chapter bridges the contextual background of the study and the detailed linguistic analysis of the students' texts. It introduces a number of linguistic processes, such as defining and taxonomising, which are recurrent themes in the following chapters of this thesis.

The concept of an academic discourse community was introduced in Chapter One as a means through which the relations between the students and the mature discourse community could be explored. An important element of an academic discourse community is its pedagogic discourse. In Chapter One, the pedagogic discourse was described as the main means through which undergraduate students experience the discursive practices of the discipline. Therefore a discussion of the pedagogic discourse, its function and characteristics, is an intrinsic component in any discussion of the contextual influences on students' disciplinary learning through writing.

The literature review in Chapter One introduced Bernstein's conceptions of disciplinary knowledge as hierarchically organised from the "known to the unknown". Following Bernstein, the discourse community was conceptualised as consisting of both static, canonical knowledge, as well as a domain where new knowledge and meanings are created (See Chapter One, Figure 1). This current chapter is also concerned to identify whether in this study a pedagogic discourse

plays a role in moving students towards a perception of disciplinary knowledge as constructed and therefore contestable.

5.1 ANALYTICAL APPROACH

The pedagogic texts experienced by the students in this study were both spoken and written. Spoken texts include the students' lectures and tutorials, while the written texts include the students' textbooks, detailed subject web-pages with tutorial and lecture focus questions and summaries, and collated lecture notes. The text chosen for analysis was the students' introductory textbook, Berk (1997) *Child Development*. The choice of this text was due to its being the most frequently cited text in both the students' first and third year assignments. While it would have been beneficial to compare the findings for the students' textbook with spoken pedagogic genres such as the students' lectures, this was unfeasible logistically as well as outside the scope of this study. Comparisons between spoken and written academic pedagogic texts featured in the research of Young (1990). The text excerpts selected for analysis from the textbook were chosen on the basis of frequency of citation in the students' written assignments that form the corpus.

The analysis in this chapter is guided by the discussion of the functions and characteristics of the pedagogic discourse outlined in the introductory chapter of this thesis. To reiterate, this includes the view of the pedagogic discourse as recontextualised and static, functioning to make disciplinary knowledge accessible to students. The analysis seeks linguistic evidence for Bernstein's dual dimension of the pedagogic discourse. That is, the pedagogic discourse consists of an instructional discourse embedded in a regulative one. The analysis also seeks evidence for the contrastive, but co-existing point of view that the pedagogic discourse can play an important role in inducting students to the uncommonsense knowledge of the disciplines. The linguistic analysis draws on the analytical tools of systemic functional linguistics described in Chapter Three.

5.2 RECONTEXTUALISATION IN PRIMARY TEACHER EDUCATION: THE REGULATIVE AND 'GRAND NARRATIVE' DISCOURSE

Bernstein (1990) argues that the embedding of an instructional discourse into the regulative discourse results in the recontextualisation of the original discourse. In other words, recontextualisation occurs when the original discourse is relocated from one context into another for the purpose of learning. In one sense, the students' textbook on child development is a doubly recontextualised discourse, as it is a discourse which has been relocated into a learning context, as well as being a discourse which has been relocated from one disciplinary field to another. That is, it has been relocated from the field of child psychology to education.

In the following excerpt from the child development textbook and in the textbook as a whole, there is linguistic evidence of the instructional discourse (what is actually taught) embedded in the regulative aspect of the discourse (the part of the discourse which is to do with the instructor's aims for learning).

Text 1
PHILOSOPHIES OF THE ENLIGHTENMENT

The seventeenth-century Enlightenment brought new philosophies of reason and emphasized ideals of human dignity and respect. Conceptions of childhood appeared that were more humane than those of centuries past.

JOHN LOCKE.

The writings of John Locke (1632-1704), a leading British philosopher, served as the forerunner of an important twentieth-century perspective that we will discuss shortly: behaviourism. Locke viewed the child as **tabula rasa**. Translated from Latin, this means "blank slate" or "white piece of paper". According to this idea, children were not basically evil. They were, to begin with, nothing at all, and their characters could be shaped by all kinds of experiences while growing up. Locke (1690/1892) described parents as rational tutors who could mold the child in any way they wished through careful instruction, effective example, and rewards for good behaviour. In addition, Locke was ahead of his time in recommending to parents child-rearing practices that were eventually supported by twentieth-century research. For example, he suggested that parents reward children not with money or sweets, but rather with praise and approval. Locke also opposed physical punishment: "The child repeatedly beaten in school cannot look upon books and teachers without experiencing fear and anger." Locke's philosophy led to a change from harshness toward children to kindness and compassion. Look carefully at Locke's ideas, and you will see that he took a firm stand on each of the basic issues we discussed earlier in this chapter. As blank slates, children are viewed in passive, *mechanistic* terms. The course of growth is written on them by the environment. Locke also regarded development as *continuous*. Adultlike behaviours are gradually built up through the warm, consistent teachings of parents. Finally, Locke was a champion of *nurture* - of the power of the environment to determine whether children become good or bad, bright or dull, kind or selfish. (p.10)

In this excerpt and in the textbook as a whole, the use of imperatives (for example, *Look carefully*) and the inclusive pronoun 'we' are part of the regulative discourse, functioning to guide the student towards appropriate learning goals (Christie 1998). The dominant process type in the imperative clauses are mental processes of cognition and perception, in which the functional dimension is to engage the students in the cognitive activity of the discipline (Young 1990). For example (mental processes are in bold script):

> ***Look*** carefully at Locke's ideas, and you will see that he took a firm stand on each of the basic issues we discussed earlier in this chapter. (Text 1)

> ***Consider*** these ideas, and you will see why Baldwin (1895) argued that heredity and environment should not be viewed as distinct, opposing forces. (Berk 1997: 13)

> ***Recall*** that Piaget did not regard direct teaching by adults as important for cognitive development. (Berk 1997: 27)

Other elements of the regulative discourse are the author's intervention in how theories are to be evaluated. Competing theories and perspectives in child development are introduced to the students in the form of a synoptic history told within a narrative structure. Authorial intervention lends the narrative a grand narrative quality, with the voice of the writer evaluating the theories and perspectives with the benefit of hindsight and modern theory (Fuller 1998). Examples of this grand narrative quality are highlighted in the following excerpts:

> In addition, Locke was **ahead of his time** in recommending to parents child-rearing practices that were **eventually supported by twentieth-century research**. (Text 1)

> Conceptions of childhood appeared that were **more humane than those of centuries past**. (Text 1)

In these examples, authorial evaluations are embedded within explanations of the theory. In the students' textbook evaluations also constitute distinct schematic stages in the explanations of many theories. These schematic stages have the sub-title

'Contributions and Limitations'. In these evaluative sections, the author tends to present the contributions and limitations of the theories as established facts through the choice of 'fact-like' reporting verbs (Hyland 1999c), for example, *indicates, shows*. The sources of these 'facts' are generic, unspecified participants, (for example, **Research** *indicates,* **Many researchers**). In the textbook, it is noticeable that these 'facts' are supported with minimal or no citations. For example:

> *Generic unspecified participants (in bold) and verbal processes (underlined) construing propositions as 'facts'*
>
> **Research** <u>indicates</u> that Piaget underestimated the competencies of infants and preschoolers.
>
> This discovery has led **many researchers** <u>to conclude</u> that the maturity of children's thinking may depend on their familiarity with the task and the kind of knowledge sampled.
>
> Finally, **many studies** <u>show</u> that children's performance on Piagetian problems can be improved with training. (examples from Berk 1997: 21)

The narrative structure is realised through temporal information organising textual development at a macro level. That is, temporal information is foregrounded at the beginning of each paragraph, for example, in Text 1, *The seventeenth century Enlightenment*; and in subsequent paragraphs: *In the eighteenth century; A century after Rousseau*. Other narrative elements are specific human participants (*Locke*), and past tense processes (e.g. *brought, viewed, described, opposed*). The narrative structure is largely a result of the diachronic overview introducing and mapping the theories of the discipline. However, it is noteworthy that the explanation of theorists' ideas and theories mirrors the academic discourse community's practice of building up knowledge claims by drawing on the work of other theorists in the field. Clusters of reporting processes (e.g. *Baldwin argued, Jean Piaget theorised, Bandura has emphasized*), as well as circumstantial elements of angle (e.g. *according to Vygotsky*) result in a rich intertextual dimension of paraphrased and quoted texts, a dimension which is intrinsic to professional academic discourses. However, unlike the professional discourse, the supporting citations are less in evidence or even absent.

The elements of 'grand narrative' structure and regulative discourse identified in the child development text function primarily to reproduce and map disciplinary knowledge in a way which is accessible to novice students. Seen from this perspective, the pedagogic discourse of child development instantiated in the textbook is an unsuitable one for apprenticing students to participate as mature members of the disciplinary discourse community. It downplays the socially and rhetorically constructed nature of academic discourse, and through the grand narrative elements presents a relatively static, uncontested map of existing disciplinary knowledge. Similar findings have been reported in the fields of geology (Love 1991, 1993) and genetics (Myers 1992).

5.3   THE SOCIALISING ROLE OF PEDAGOGIC DISCOURSE

While the notions of recontextualisation and grand narrative structures emphasise the distance between the pedagogic discourse of an academic discourse community and its mature counterpart, another perspective has been to emphasise the relatedness between these two discourses. Such a perspective emphasises the apprenticeship role that the pedagogic discourse plays in socialising novice members to the discourse and epistemologies of the discipline. Of particular interest in the following discussion are the ways in which the students' textbook constructs the experiential world of child development, and the ways in which language is used to shunt the students from commonsense views of child development to the more uncommonsense meanings of the field.

5.3.1   Introducing the Experiential World of Child Development

This section examines the language of the textbook as a means of apprenticing students to a discipline's specialist ways of knowing. It attempts to identify in what ways the language of the textbook introduces and constructs the world of child development for novice students.

In the child development text, the logogenetic unfolding of the chapters moves the student from the commonsense world of everyday experience into the 'uncommonsense' ways of interpreting experience in the discipline. Many chapters begin with a story or anecdote from everyday experience, such as a sequence of events or observations. These vignettes are written in a more congruent spoken style with little grammatical metaphor and low levels of lexical density. In some instances the anecdotes are followed by rhetorical questions which seek explanations for the observed phenomena or explanations. In other instances, as in Text 2, the vignettes are followed by the disciplinary 'naming' of the observed phenomena, which is to be the focus of the chapter. The lexicogrammatical choices of the rhetorical questions and explanations typically shunt the students towards the uncommonsense incongruent language of the disciplinary discourse. For example:

Text 2

(Introduction to chapter 11: Self and Social Understanding)

"Grandpa, look at my shirt!" exclaimed 4-year-old Ellen at her family's annual reunion. "See, it's got the three bears on it and their house and…"

Ellen's voice trailed off as she realized all eyes were turned toward her 1-year-old cousin, who was about to take his first steps. As little David tottered forward, the grownups laughed and cheered. No one, not even Grandpa, who was usually so attentive and playful, took note of Ellen and her new shirt.

Ellen felt a twinge of jealously and retreated to the bedroom, where she threw a blanket over her head. Arms outstretched, she peered through the blanket's loose weave and made her way back to the living room, where she saw Grandpa leading David about the room. "Here I come, the scary ghost," announced Ellen as she purposefully bumped into David, who toppled over and burst into tears.

Pulling off the blanket, Ellen quickly caught her mother's disapproving expression. "I couldn't see him, Mom! The blanket was over my face," Ellen sheepishly explained.

Ellen's mother insisted that she help David up and apologize at once. At the same time, she marveled at Ellen's skillful capacity for trickery.

....

This chapter addresses the development of **social cognition**, or how children come to understand their multifaceted social world.

(Berk 1994: 423)

Toward the end of this narrative Ellen's combined actions are named by her mother as "Ellen's skillful capacity for trickery". There follows a disciplinary naming and classifying of this broader phenomenon as "the development of social cognition". The grammar reconstrues, or "reconstructs semiotically" (Halliday 1998: 185) experience construed as actions, to experience construed as a kind of entity. In the

final phase of the logogenetic unfolding of this text, the disciplinary naming includes taxonomic information in the nominal group, the 'kind of' cognition that is a part of a child's overall development. In this sense, the term 'social' acquires a technical meaning in the disciplinary taxonomy of child development.

experience construed as process

She	purposefully	bumped into	David
Actor	Circumstance	Process	Goal

experience construed as entity

Ellen's	skillful	capacity	for trickery
Deictic	Epithet	Thing	Qualifier

taxonomising and technicalising

the	development	of social cognition	
Deictic	Thing	Qualifier	
		Classifier	Thing

This strategy functions not only to shift students from commonsense meanings to 'uncommonsense' disciplinary ones. It also models aspects of a fundamental methodology of the discipline: the role of observation in the research process. In her introduction Berk refers to one of the philosophies of the textbook as to provide "an appreciation of basic research strategies to investigate child development" (p.xv), and the subject outline refers to the requirement to "apply the theoretical perspectives to the observation and analysis of children's behaviours". Berk lists the other aims of the textbooks as follows:

1. an understanding of the diverse array of theories in the field and the strengths and shortcomings of each
2. knowledge of both the sequence of child development and the processes that underlie it
3. an appreciation of the impact of context and culture on child development
4. a sense of the interdependency of all domains of development: physical, cognitive, emotional and social (pp.xv-xvi)

While aims 1 and 2 are primarily knowledge transmitting aims, they are also concerned with identifying the theories of the field, the sequence of child development and the processes. The focus of aims 3 and 4 can be seen as

transmitting understanding about methodological concerns of the discipline. In some respects, these aims reflect the professional psychologist's task of observing and explaining the experiential world of child development. In the context of the discipline of Primary Teacher Education, an implicit aim is applying aims 1-4 to the classroom.

The ways in which language identifies and orders the specialist world of child development in the textbook is the focus of the next section. The discussion draws primarily on the discourse descriptions by systemic functional linguists in Halliday (1994), Halliday & Martin (1993), and Martin and Veel (1998).

5.3.2 Defining (Naming)

The process of defining, or naming a phenomenon is a means by which technicality is built up in the discourse. Wignell et al. (1993) refer to technicality "as the use of terms or expressions (but mostly nominal group constituents) with a specialised field specific meaning" (p.144). In the following examples, most of the technical terms have an everyday meaning; however, the process of naming them gives the terms a new value relevant to the field. In the child development text the process of defining occurs mostly through relational identifying processes. Structurally, that which is to be identified is the Token and the explanation is the Value (Halliday 1994).

1. [Token] Nature [Relational: identifying] is understood to be [Value] the hereditary information we receive from our parents... that signals the body to grow and affects all our characteristics and skills. (Berk 1997: 7)

2. Whereas [Token] nurture [Relational: identifying] represents [Value] the complex forces of the physical and social world that children encounter in their homes, neighbourhoods, schools and communities. (ibid)

3. [Token] Cognitive development [Relational: identifying] is [Value] the inner process and products of the mind that lead to 'knowing'. (Berk 1997: 211)

Technical terms are also introduced in a less direct way through clause complex sequences which include verbal and mental processes with circumstantial elements of Role. The Senser or Sayer is typically realised as a specific human participant

(e.g. *Pavlov, Vygotsky*), while the Phenomenon is realised by an anaphoric referent (e.g. *it*). The technical term is introduced in the participant role of circumstantial element of Role (e.g. *as a zone of proximal development; as classical conditioning*). This transitivity pattern, construing how a theorist represents a particular phenomenon, results in an implicit definition of that phenomenon. The anaphoric referent typically can refer to a nominal group (example 4, *make believe play*), or embedded clause in a nominal group (example 5. [[*that behaviours are learnt*]]), which can be the phenomenon subsequently renamed as a technical 'thing'; a phenomenon which has a value in the discipline. The phenomenon is implicitly defined through how the theorist regarded or described it. In some instances, a quasi definition or explanation is provided, such as in the non-defining clause *in which children advance themselves as they try out a wide variety of challenging skills* (example 4). However, this implicit way of defining a newly introduced technical term, or a term that has been technicalised, can result in some ambiguity. That is, it would not be necessarily clear to a novice what relation the grammar is establishing between *make believe play* and *zone of proximal development*: whether the relation is one of defining $x = y$, whether it serves to classify in terms of *x has the characteristic of y*, or whether *y is in a part whole relationship to x*.

4. In accord with his emphasis on social experience and language as vital forces in cognitive development, Vygotsky (1933/1978) granted make-believe play a prominent place in his theory.

   [Senser] He [Process] regarded [Phenomenon] it [Role] as a unique, broadly influential zone of proximal development, in which children advance themselves as they try out a wide variety of challenging skills. (p.102)

5. Ivan Pavlov had a strong belief [[that behaviours are learnt]], and [Sayer] he [Process] explains [Phenomenon] it [Role] as "classical conditioning".

This implicit way of introducing and defining new terms, however, contributes to the constructed sense of disciplinary knowledge. That is, the human element, the theorist is retained in the naming of a phenomenon. The implicit way of introducing and defining new terms also plays an important logogenetic function in developing a taxonomy of child development theories. The specific human actor is reconstrued as a deictic element in the nominal group structure, while the process of saying or

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perceiving becomes, through nominalisation, an abstract entity in the nominal group. That is:

6. Vygotsky's **view** of make believe play*

*other realisations in the text are classifiying: e.g. '*the Vygotskian view*; *the Piagetian view*

5.3.3   Classifying (Ordering)

The process of naming phenomena and thereby introducing the technical vocabulary of the discourse enables the ordering and classification of the experiential world of child development. Once phenomena have been given a technical name, they can be systematically related to each other through taxonomies (Wignell et al. 1993). Wignell et al. describe a taxonomy as "an ordered, systematic classification of some phenomena based on superordination or composition (p.137). A preliminary investigation suggests that taxonomising plays a major logogenetic role in the organisation of the child development textbook. However, it is a linguistic one rather than a diagrammatic one. For example, in Text 3, two perspectives on the nature of child development are introduced.

> **Text 3'**
>
> VIEWS OF THE DEVELOPING CHILD
>
> Recently, the mother of a 16-month-old boy named Angelo reported to me with amazement that her young son pushed a toy car across the living room floor while making a motorlike sound, "Brmmmm, brmmmm," for the first time. "We've never shown him how to do that!" exclaimed Angelo's mother. "Did he make that sound up himself," she inquired, "or did he copy it from some other child at day care?"
>
> Angelo's mother has asked a puzzling question about the nature of children. It contrasts two basic perspectives: the organismic, or *active* position, with the mechanistic, or *passive* point of view.
>
> **Organismic theories** assume that...
>
> In contrast, **mechanistic theories**... (pp. 5-6)

The taxonomic relationships which are realised logogenetically in this text can be shown diagrammatically. These are shown in Figure 5.1.

theories of child development →
- organismic theories
- mechanistic theories
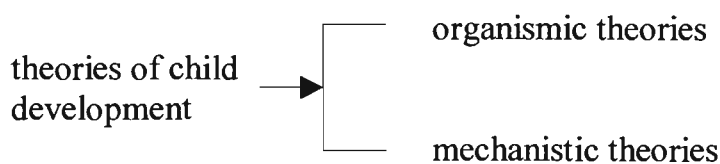
Figure 5.1 Taxonomy of theories of child development

The next branch of the taxonomy involves classifying and ordering organismic and mechanistic theories of child development. In the development of the taxonomy this is a recursive process, as at one level the next branch of the taxonomy is systematically introduced mainly through composition. A typical transitivity structure is of relational possessive processes, (*a consists of x, y, z)*. These relational possessive processes are typically preceded by mental processes with specific human participants as actors (*the theorists*) with whom the components of the theory are linked (e.g. *Piaget theorised*). In example 7, the relational possessive process in which the taxonomic relation of composition is established is embedded in the Phenomenon of the mental process. Again it is possible to show the taxonomic relations diagrammatically. These are shown in the taxonomy in Figure 5.2.

7. [Senser] Jean Piaget [Process] theorised
    that cognitive development may only be achieved through stages,
    and that each individual stage was accompanied by a period of development.
    [Senser] He [Process] believed [Phenomenon] these stages to consist of the Sensorimotor Stage, the Preoperational Stage, 2-7 years, the Concrete Operational Stage, 7-11 years, as well as the Formal Operational Stage, 11 years up.

Piaget's stages of cognitive development →
- Sensorimotor
- Preoperational Stage
- Concrete Operational Stage
- Formal Operational Stage
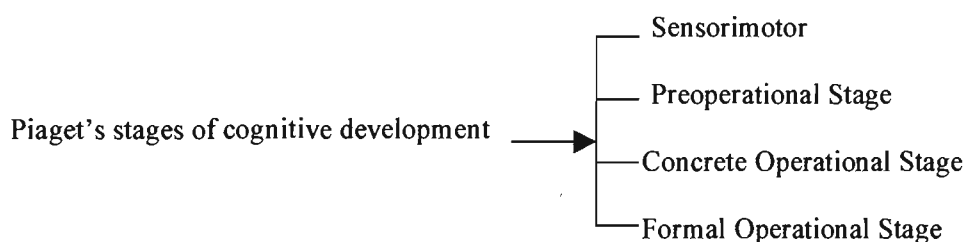
Figure 5.2 Taxonomy of Piaget's stages of cognitive development

5.4 CONCLUSION

It appears that the language of the child development textbook plays a significant role in socialising students to the experiential world of child development. By moving students from commonsense views of the world towards the uncommonsense disciplinary ones, and by modelling the epistemological practice such as observation and the discursive ones of naming and classifying, the pedagogic discourse can be seen to apprentice students into some of the discursive practices of the discipline. However, as the earlier investigation from the same textbook showed, pedagogic discourses are in some regards unsuitable for apprenticing students as they downplay the constructed and contested nature of disciplinary knowledge. That is, the pedagogic discourse functions primarily to transmit knowledge about the discipline, a process which results in the representation of disciplinary knowledge to some degree as static and canonical.

An intrinsic component of disciplinary learning for novice students is learning the discursive practices of the discourse community. Yet for the novice students in this study, their textual experience of the disciplinary discourse is mostly via their textbook, a pedagogic text which because of its generic purpose can only apprentice students to some of the discursive practices of the discipline. The findings from this chapter suggest that the pedagogic discourse plays only a small role in moving students towards a perception of disciplinary knowledge as constructed and therefore contestable. This echoes the findings from the previous chapter, in which it was argued that the participants in this study have little opportunity in the early stages of their studies to experience the disciplinary context as a dynamic social environment, in which negotiating meanings is an intrinsic discursive practice.

The discussion of the pedagogic discourse as instantiated in the students' introductory textbook has provided another dimension to the contextual factors framing and influencing students' learning. It has also introduced a number of processes realised through language which play an important role in introducing and

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construing the field of child development for the students. These processes are recurring themes in the following chapters on the students' disciplinary learning through their writing.

CHAPTER 6

LEARNER GENRES AND GENERIC CHOICES

This chapter begins the linguistic discussion of the students' texts. The textual analysis in this chapter is a 'top down' approach, investigating the students' texts from the perspective of discourse structure, while in subsequent chapters the focus is on lexicogrammar. In this chapter the investigation is longitudinal as well as broad in its scope. That is, it includes a longitudinal perspective of the students' control of genres, seeking to identify significant differences which emerge between first year writing and the writing of the same students in their third year of study. The chapter also seeks to identify differences in generic choices occurring in lower scoring papers as compared to the choices made in higher scoring texts. The overarching questions addressed in this chapter are:

i)   In what ways do the learner genres in which the students were writing contribute to the students' learning of specialist knowledge?

ii)   What, if any, are the distinctions in generic choices between low scoring texts and high scoring ones?

iii)   What developments occur in control of generic structure and realisation of register variables in the writing of first year students and the writing of the same students in the third year of their studies?

The findings from the contextual chapter, Chapter Three, allow the formulation of several hypotheses in regards to projected findings for this chapter on genre. One hypothesis is that the Exposition genre will predominate in the high-scoring texts. This assumption is due to the foregrounding of argument in Expositions, a social purpose which is highly valued in this educational context. Another related hypothesis is to do with the 'analysis versus description' dichotomy raised in Chapter Three. That is, descriptive genres are more likely to occur in the lower scoring texts,

and in the early stages of the students' learning. The final hypothesis has to do with choice of genre: students are less likely to write successful texts when the genre's social purpose or schematic structure is neither clear nor familiar to them.

The chapter begins by contextualising the students' writing within their course of study, and providing a rationale for the choice of genres and texts selected for analysis. This is followed by a description of the analytical tools and procedure, the presentation of the results and discussion, as well as the implications of the findings.

6.1 ASSIGNMENT TASKS IN THIS STUDY

The texts collected during the three years of this study were written in response to assignment tasks which asked specific questions or instructed the students to discuss divergent theoretical perspectives. In the third year of the study, students were also required to critique a journal article. The 'question' and 'discuss' assignments are referred to as essays in the students' subject outlines, while the critique of the journal article is referred to as a journal review article. In the following discussion the students' texts are referred to by functional generic labels. However, in introducing the assignment tasks, the terms used in the subject outlines are retained. In response to the essay questions, students wrote Discussions and Expositions, while the journal article review resulted in texts which for the purposes of this study are referred to as Evaluative Accounts. In addition to these text types, students were required to submit other written genres in the subjects that are the focus of this study. In the subject outlines these text types are called a reflection assignment (1999), a field study research project and literature review (2000) and a seminar presentation (2001). The reflection assignment (1999) and the field study research project and literature review (2000) were undertaken as group projects, so it would not have been possible to monitor individual students' contributions and to track any writing development. The seminar presentations were oral texts. These assignments therefore did not form part of the data for this study.

The March 1999 assignment had a word limit of 1500 words, while the other assignments had a word limit of 2000 words. In many cases, however, the students' assignments exceeded the word limit. From the tutors' comments on the students' assignments it appears that students were not penalised for exceeding the word limit. An example of a complete student text showing the number of paragraphs is included in the Appendix (Appendix B). The sample text is a high scoring third year essay assignment.

6.2 DATA SELECTION

Since one aim of the study was to identify and track the students' writing development, texts were selected mainly from students who completed three years of study. Assignments were also selected from two first year students who participated in the first year interviews, but who did not continue with mainstream study. For this chapter, another criterion for data selection was the need to select assignments from the lowest and highest scoring grade range, to investigate the question, *What are the distinctions in generic choices between low scoring texts and high scoring ones?* From each year approximately eight assignments from the Fail to Credit spectrum of grades were analysed, and approximately six assignments from the Distinction to High Distinction range of grades. This strategy allowed the researcher to draw more substantiated generalisations from the findings than would have been possible with the analysis of one assignment from each grade.

In total, fifty-eight texts form the corpus for this chapter. Sixteen assignments were analysed from the 1999 data set, fourteen assignments were analysed from the 2000 data set, while fourteen essays and fourteen journal article reviews were analysed from the 2001 data set. The data used for analysis in this chapter is given in Table 6.1. This table includes the assignment tasks as well as the number of texts selected from each grade.

Table 6.1 Overview of data for genre analysis

Assignment Task	Number of Assignments & Grade				
	F	P	C	D	HD
Semester 1, April 1999, Essay: "The age old Nature-Nurture controversy about the underlying causes of the course of development continues today, with some theorists attributing the course of development to genetic influences while others believe that the complex forces of the environment are responsible. Discuss the evidence for each of these positions and indicate how this debate will influence your work."	0	4	4	5	3
Semester 2, October 2000, Essay: Students were able to select from twelve essay topics. Individual topics are given with the students' essays.	1	0	8	3	2
Semester 2, April 2001, Journal article review: "Select a recent (ie. 1998+) journal article relevant to the main lecture schedule. Briefly summarise the main points of the article then critically analyse the content in terms of your wider reading and participation in lectures and tutorials generally."	0	6	3	3	2
Semester 2, June 2001, Essay: "The essay requires students to reflect critically on major theories of cognitive development and the manner in which these theories can be combined within a personal approach to teaching practice. **Question:** What theory or theories of children's thinking and learning are the most defensible for your future role as a primary educator? In order to answer this question, you must critique all the theoretical perspectives in this subject as the basis for your position."	0	1	6	4	3

Table 6.2 details the grades awarded for the individual participants' texts. The assignments of Students 1 and 7 were included despite their withdrawal from the course, as the interviews with these students were referred to in the previous chapter.

Table 6.2 Grades awarded for the participants' texts

	April 1999	Oct. 2000	April 2001	June 2001
Student 1*	P+	*Withdrew from studies*		
Student 2	D	HD	C	D
Student 3	C+	C-	P	C+
Student 4*	HD	HD	D	HD
Student 5	C	C+	P-	P+
Student 6*	D	C+	HD	HD
Student 7*	HD	*Changed into the KBC stream*		
Student 8	C	F	P-	C-
Student 9*	D-	C+	D	HD
Student 10	D	D	D+	HD
Student 11	P-	C	P-	C
Student 12	P	C-	P	C-
Student 13*	HD	D	C	C-
Student 14*	P+	C+	C	D-
Student 15	D	D	HD	D
Student 16	C-	C+	P	C

indicates that the student was interviewed either at the beginning and/or close of the study

6.2.1 Supplementary Data

In Chapter Three, the need for an integrated research paradigm incorporating linguistic, discourse analytical and ethnographic approaches to researching academic writing was argued. Therefore the assignments as data are supplemented by interview data conducted with the tutors and contextual documentation such as the tutors' written commentaries on the students' texts. While the interviews were discussed in detail in the previous chapter, they are referred to in this chapter as a means of informing the analytical framework and interpretation of the results. The tutors' written comments are referred to as they provide valuable insights into the tutors' expectations of discursive practices. The tutors' comments were particularly useful in the identification of the genres' obligatory schematic stages.

6.3 ANALYTICAL TOOLS

As outlined in the methodology chapter the main analytical tools for this exploration of learner genres are from systemic functional linguistics. In this chapter, the levels of analysis are generic structure and register, with some brief commentary on lexicogrammar. To recapitulate from Chapter Two, generic structure refers to the distinct stages through which a text moves to achieve its overall purpose. In the case of longer texts such as those that constitute this corpus, schematic stages can consist of genres such as Recounts and Reports functioning as Micro-genres in a Macro-genre structure. The identification of Micro-genres as schematic stages was an important step in identifying the roles these genres play in the students' learning through writing. The level of register with its contextual variables of field, tenor and mode can provide insights into how the students construe and interpret their educational context (Veel & Coffin 1996). Of particular interest are the following questions relating to aspects of field, tenor and mode:

a) Field: the things and events discussed in the texts. To what extent do the students relate the field to their own experience of education? In other words, to what

extent is the field construed as commonsense knowledge, or as a more abstract dimension?

b) Tenor: the way social relations are construed in the text between the student and reader, and the way the student engages with issues presented in the texts. To what extent do the students construe themselves as novices in their own texts, or as insiders participating in the knowledge making practices of the discourse community (Veel & Coffin 1996)?

c) Mode: the role language itself is playing, and the channel of communication. To what extent do the students' texts display grammar patterns of more spoken texts? How are the texts organised?

The first task of analysis was to determine the dominant text types and their schematic stages as evident in the students' texts. This procedure was informed by descriptions of primary and secondary school texts from genre-based literacy pedagogy and theory (in particular, Derewianka 1990; Halliday & Martin 1993; Martin 1985, 1992). These descriptions of the main text types, their generic stages and linguistic features provided the starting point from which to analyse the trainee teachers' texts. Generalisations about these text types are summarised in Table 6.3.

Descriptions of genre families and the genres of specialist disciplinary domains have also informed this study. Of particular relevance is Martin's (1985) distinction between Hortatory Expositions and Analytical Expositions. Hortatory Expositions are texts whose Thesis contains a moral dimension, challenging the status quo and arguing that something should be done, while texts that argue a judgement are referred to as Analytical Expositions. Further distinctions along the analytical dimension of Expositions are made in Martin and Peters (1985), in which Expositions which attempt to persuade the reader intellectually about something, or how the world should be seen are referred to as persuasive analytical Expositions. Martin and Peters' taxonomy is useful for foregrounding the type of variation which can occur in Expositions. However, for this study the differences between the schematic stages of the various sub-classes of Exposition detailed in Martin and Peter's taxonomy are not sufficiently distinct in order to classify some of the student

texts. For example, an assignment question such as *What theories of children's thinking and learning are the most defensible for your future role as a primary educator?* could result in texts whose introductory paragraphs "indicate a judgment to be sought" (EVALUATIVE), and therefore evaluate a particular theory. Alternatively, such an introductory paragraph could also be seen as arguing a case for a particular theory, that is, "propose thesis to be defended" (ARGUMENTATIVE) (Martin & Peters 1985: 87). For this reason Martin and Peter's taxonomy of Expositions is not adopted for the analysis. Instead, the finer distinctions between the students' texts are identified at the level of sub-stages and Micro-genres occurring in the schematic structure.

Table 6.3 Summary of written genres from educational contexts and their features

GENRE	SCHEMATIC STAGES	SOCIAL PURPOSE	LANGUAGE FEATURES
Recount	Orientation^Events	To retell events for the purpose of informing or for entertaining	Past tense, specific participants, built up around a sequence of events, material processes.
Procedure	Goal^Steps	Procedures are about how things get done	Built up around a sequence of events, generic participants, timeless verbs.
Report	General Classification^ Description (parts, qualities, behaviours)	To describe the way a class of things are with reference to a whole range of phenomena, natural, cultural, social	Timeless verbs, relational processes, generic participants, can contain causal and taxonomic relations.
Explanation	General statement to position reader^ Sequenced statements	Explanations focus on processes – on how things come to be done. Can outline an activity (Martin 1993b)	Temporal and causal relations, possible technical terms, passive voice.
Exposition	Thesis^Argument^ Reiteration	To present a logically sequenced argument in favour of a judgment, to make a point	Timeless verbs, relational processes, generic participants, evaluative lexis, cohesive markers to signal rhetorical structure, possible technical terms, causality construed through conjunctions, processes, and participants.

Discussion	Issue^Statements of various viewpoints^ Recommendation	To present both sides of an issue and to make an informed recommendation	Timeless verbs, relational processes, generic participants, evaluative lexis, cohesive markers to signal rhetorical structure, adversative logical relations, possible technical terms, causality construed through conjunctions, processes, and participants.

N.B. The symbol ^ means that the element to the left precedes the following element.

6.4 DEVELOPMENT AND DESCRIPTION OF THE MACRO-GENRE ANALYTICAL FRAMEWORK

Determining the sub-genres and schematic stages of the student texts was a complex and crucial task. It was complex as much of the students' writing consisted of reporting knowledge claims, a function that contains in itself Explanations, Descriptions, Recounts and so on. Another problem was the level of rank. The division of the texts into clause-complexes would have provided a more accurate picture of the sub-stages and Micro-genres, yet the aim of the analysis was to identify the main Micro-genres occurring in fifty-eight texts averaging approximately 2000 words each. Accurately delineating the schematic stages in the texts was also crucial from the perspective of learning through language. Determining the roles that description, explanation and argument played as genres in the students' learning was a driving force in developing an analytical tool.

Preliminary analysis of five texts from each assignment task was undertaken in order to assess the adequacy of existing descriptions of genres for this study, such as those outlined in Table 6.3 or in the discipline specific domain of secondary school history (NSW Department of Education 1996). The findings suggested that three Macro-Genres predominated in the students' texts: Exposition and Discussion, as broadly described in Table 6.3, and an additional text type, which is referred to in this study as an Evaluative Account. On the basis of the preliminary analyses, the social purpose, principal schematic stages and sub-stages of these genres were identified.

It needs to be pointed out at this stage that the schematic stages identified for each of the three genres are not intended to function prescriptively in a pedagogic context. Rather their identification was functionally motivated for the development of an analytical framework with which to investigate the similarities and differences between the students' texts.

6.4.1 The Exposition Genre

The social purpose of an Exposition is to persuade the reader that the text's thesis is an accurate proposition (Martin 1985). In an educational context, the genre allows tutors to monitor students' understanding of concepts and issues.

The broad schematic stages of an Exposition are typically:

SCHEMATIC STAGES	SUB-STAGES
Thesis^	Thesis: Orientation, Position, Preview
Arguments^	Argument: Point, Elaboration,
(Implications)	Implications: Point, Elaboration, Recommendation
Reiteration	
	Reiteration: Summary, Reiteration, Implications

N.B. The sub-stages are possible stages rather than mandatory ones. Bracketed schematic stages are likewise optional stages.

The purpose of the Thesis stage of the text is to state the position the writer will argue. The thesis may contain an Orientation, which provides background information, while the Preview provides a synoptic account of the arguments and implications to be presented. It can include a preview of the Implications for Classroom Practice. The Preview may also contain Definitions of technical terms which are intrinsic to the Thesis.

For example:

Macro schematic stages	Sub-stages	Excerpt from Student 6, 1999, Grade: Distinction
THESIS	Position Preview	All humans are individuals; their development depends on both their inherited genes and their environment. There are many theories on whether nature (genetics) or nurture (environment) is the major influence on the rate of human development. Both are linked and cannot exist without each other. As each human is an individual the influence of genes and environment within him or her is unique to the individual (Herrmann 1993 p. 19). The ongoing nature-nurture debate will continue to influence teaching methods, however to educate individuals teachers need a wide and diverse range of teaching techniques in order to appeal to individuals learning styles.

The purpose of the Argument stage of the Exposition is to present a series of logical arguments in support of the Thesis. The arguments consist of points supported by evidence, which in terms of sub-stages is referred to as Point, Elaboration. In the more successful texts, each argument tended to be presented in the form of a paragraph.

The preliminary analysis showed that many of the points in the students' arguments were arguments or position statements of theorists or authorities in the field. Indeed the reporting of knowledge claims appeared to function as a major discourse-organisational strategy to present arguments for the Thesis. For example, the four sentences below are the first sentences from four paragraphs which develop the argument for the Thesis: *Development depends on both inherited genes and the environment.*

Par. No.	Excerpt from Student 6, 1999, Grade: Distinction	Language features
1	Jean Piaget's studies of child development were influenced by his earlier biological studies, in particular the concept of adaptation. ...	*Specific human participant as Theme*
2	Behaviourists, such as B.F. Skinner believed that the environment is the major contributing factor to child development. ...	*Class of human participant as Theme (behaviourists); projecting mental process of cognition; projected relational process*

3	Ned Hermann (1993, p. 19) writes "most brain researchers agree individual differences in behaviour result in part from genetically determined differences in brain organisation."...	*Verbal process (Locution) with specific human participant as Sayer*
4	James Baldwin considered both nature and nurture to be equally important in the development of humans (Berk 1997, p.13) ...	*Mental process of cognition*

This discourse-organisational strategy raised two related questions. The first was what functional stage in the text did this strategy achieve: Argument or Description of Theory? To distinguish the two was important, as in the social context tutors value arguments that are the result of synthesised information or considered responses to theoretical positions. According to the tutors, what is less valued is unprocessed knowledge claims taking the place of the students' arguments (see Chapter Four).

The second question was to do with the broader issue of the students' learning through writing. Did this strategy reflect a lack of synthesis of information on the student's part, or was it a necessary stage in building up the student's understanding of the various viewpoints within the theoretical domain? To reflect these concerns, the reported knowledge claims functioning as arguments were identified and labelled as the functional sub-stage Reported Point. Reported evidence for the argument or position was similarly identified and labelled as the functional sub-stage Reported Elaboration. Finally, many students included a distinct schematic stage with the Point and Elaboration structure linking the theoretical discussion to classroom practice. This schematic stage is referred to as Implications. Other students chose to include a discussion of implications for the classroom as part of their Elaboration for a Point, as in the following example.

For example:

Macro schematic stages	Sub-stages	Excerpt from Student 6, 1999, Grade: Distinction
ARGUMENT	Reported Point Elaboration Counter Point Elaboration Implications	Behaviourists, such as B. F. Skinner believed that the environment is the major contributing factor to child development. Skinner's research shows that animals would respond to certain external stimuli and the response could be increased or decreased with reinforcement. A child's behaviour can be increased with rewards and decreased with punishment (Berk 1997, p. 18). While this seems to work in a controlled environment, each individual child, due to his previous experiences and his genetic makeup has a different notion of rewards and punishment. A teacher may use "time-out" as a method of punishment, some children will dislike being separated from the class, while another child will enjoy their own company. A teacher with a predetermined set of rewards and punishments may be able to teach some students, but will need to adjust rewards and punishments to suit the individual.

The function of the final stage, the Reiteration, is to re-affirm the Thesis. This can be accompanied by a summary of the main arguments. In the field of primary teacher education, the Reiteration stage as well as the Thesis often include a comment on the significance of the Thesis for classroom practice. This sub-stage is referred to as Implications.

Macro schematic stages	Sub-stages	Excerpt from Student6, 1999, Grade: Distinction
REITERATION	Reiteration Summary Implications	Nature and nurture are interwoven and both play an important role in the development of the human being. Nature provides the species with the basic instincts and innate abilities needed to survive and adapt to the social, physical and cognitive environment. How much nature or nurture contributes to human development is based on the individual genes and environment. In order to teach future generations teachers should try to meet individual needs. This can be achieved by incorporating ideas from different theories for example social interaction with peers and supportive adults should be combined with a rich learning environment. Teachers need to use a wide range of techniques in order to be a positive influence on the development of the diverse range of individual and unique children.

6.4.2   The Discussion Genre

The social purpose of the Discussion genre is to present both sides of an issue and to make an informed recommendation. From the perspective of learning, a Discussion allows the tutor to monitor the students' understanding of competing perspectives and their ability to make an informed decision supported by evidence.

The schematic stages of a Discussion are typically as follows:

SCHEMATIC STAGES	SUB-STAGES
Issue^	Issue: Orientation, Statement of Issue, Preview
Statements of Various Viewpoints^	Various viewpoints: Point, Elaboration
(Implications)	Implications: Point, Elaboration, Recommendation
Position	Position: Summary, Position, Implications/Recommendation

Discussions, unlike Expositions, do not set out to convince the audience of a particular position. Instead Discussions present both sides of an issue then make an informed recommendation. The Issue stage names the issue to be discussed. In the first year student texts, the issue is sometimes presented as an interrogative clause: for example, *The question is, however, are those [gender] differences a result of the schooling process?* The Issue may include some Orientation to the significance of the issue, as well as a Preview of the various viewpoints. In the context of primary teacher education, the Preview may also include some discussion of the implications for the classroom. The following schematic stage is the Statement of Various Viewpoints. From a discourse-organisational perspective, this may involve a point, counter-point structure; or a cluster of viewpoints for one aspect of the issue, followed by a transitional stage, then the viewpoints from another perspective. As in Expositions, there may also be the schematic stage, Implications. Alternatively this stage may be subsumed as Elaboration for a Point. In the final stage, the Position, the writer states which side of the Issue he/she is in agreement with based on the preceding viewpoints and evidence. The final stage may also include the sub-stage Implications.

For example (excerpts only):

Macro schematic stages	Sub-stages	Excerpt from Student 4, 1999, Grade: High Distinction
ISSUE	Issue Preview	The personality of a child is a very important battleground in the nature – nurture debate. How much a child is the product of its genetic inheritance, or how it is the product of its experiences and environment will probably never be conclusively argued. Nevertheless, how one perceives the topic will affect how, and in what environment, the child is raised from the moment of birth.
STATEMENT OF VARIOUS VIEWPOINTS (viewpoint 1)	Point Reported elaboration Point	If one takes the view of Darwin's evolutionary theory, and his theory of natural selection, the personality traits that are most successful will be those that promote the reproduction of the organism. In turn, those organisms that are the products of this reproduction are more likely to inherit the personality traits of their parents. David Buss (as paraphrased by Weiten in <u>Themes and Variations</u> 1998) contends that the "Big Five" personality traits – extroversion, neuroticism, agreeableness, conscientiousness, openness to experience – are those which best fit an individual to survival and social success, and hence reproduction. He argues that across cultures, and in evolution, humans have depended heavily on group interactions (for food, protection, and other benefits), and that the ability to fit into a group, and make contributions to that group, is vital for survival. This is a powerful, and practical, argument for the influences of genes on an individual's personality. *continued*
TRANSITION	Transition	To declare that genetics is the single driving force in a child's personality is to declare that the environment in which they live has no effect on their development. However it is clear that even physical traits, which are much more easily defined and quantified, depend on the environment to limit or foster their expression. It follows that this would also be true for personality traits. *continued*
POSITION	Summary Position Recommendation	As has been seen, the argument over whether nature or nurture plays the more important role in a child's development will probably never be resolved. The evidence, and experience, suggests that both are intrinsically linked. I believe though, that it is vital to have as stimulating and balanced an environment as possible to ensure the child develops to his full genetic complement in a highly positive way.

6.4.3 The Evaluative Account Genre

The genres of Exposition and Discussion are frequent forms of assignment writing in tertiary settings. A less common form of written assessment is the text type known by the tutors in the study as a journal article review or journal critique. This text type has also received less attention from tertiary literacy researchers. Some exceptions

from a systemic functional perspective are Drury (1991) and Hood (2001). In addition to this research, the description of this genre and its features is informed by analysis of the fourteen texts, the tutors' comments on the students' texts, interview data with the tutors, writing guidelines in the students' subject outline, and comparisons with similar texts.

In the subject outline, the description of the journal article review required students to select a recent article, summarise the main points of the article, then critically analyse the content in terms of the students' wider reading and subject content (for the assignment task, see Table 6.1). Since the task involves reporting the content of another text, making connections with related theories and practices, as well as evaluating the implications of the research, this text is referred to as an Evaluative Account.

In the professional academic context, another form of Evaluative Account is a book review, in which the contribution of one author to disciplinary knowledge is evaluated by another author. The social purpose of this text type is therefore to pass judgment on new contributions to disciplinary knowledge, and to make the new knowledge and the judgment available to the discourse community. In the learning context, the social purpose of an Evaluative Account from the tutors' perspective is less to make the evaluation available to the wider community, but more to encourage the students to make links between the content of the article and to related theories. Students also should assess any implications of the research for classroom practice. The tutor interviews also revealed another dimension to social purpose. According to the tutors, the purpose of the Evaluative Account was to introduce the students to primary research through reading and disciplinary knowledge building practices (see Chapter Four).

For the purpose of this study, the schematic stages of the Evaluative Account are provisionally described as follows:

EVALUATIVE ACCOUNT

SCHEMATIC STAGES	SUB-STAGES
[Orientation]	Orientation: Definition, Rationale, Preview
Summary of Article	Summary of Article: Summary of schematic stages of research article
Analysis of Article	Analysis of Article: Point, Elaboration, Implications
	Implications: Point, Elaboration, Recommendation
Implications	

The purpose of the Orientation is to provide a rationale for the choice of the article, to provide a preview of the Evaluative Account, and to provide any definitions of significant terminology. The Orientation is an optional schematic stage. The Summary of Article stage introduces the article to be discussed, then provides a summary of the article. If the article reported on an empirical study, the sub-stages in the student summary were likely to contain a summary of each schematic stage of the research article, that is, Introduction, Method, Results, Discussion.

For example:

Macro schematic stages	Sub-stages	Excerpt from Student 2, April 2001, Grade: Credit
SUMMARY OF ARTICLE	Summary of Introduction Summary of Methods Summary of Findings	Within the article "Gifted Children's Understanding of Intelligence", Marion Porath outlined her belief on how gifted children understand themselves and the nature of this understanding in relation to their intelligence. The techniques Porath utilised within her study were IQ testing and semi-structured interviews and through the use of these, she found that gifted children, with age, gained a better developmental understanding process. Children's understanding of intelligence was influenced by external factors, as they grew older. Components that helped establish this were 'studies focussing on children's assessment of their own abilities' and 'studies focussed on social understandings'.
	Summary of Discussion	Porath found that intelligence was undifferentiated in regards to very young children. Her research led her to believe that these children only considered themselves as only being 'smart or dumb' in regards to their intelligence. 'Smart' related to regularly answering questions correctly during school work and behaving appropriately, while 'dumb' was associated with being in constant trouble with the teacher. Porath (1997, p. 95) stated that "young children believe that if they work harder they can become smarter".

Several students selected theoretical articles which compared different theoretical perspectives, or provided an historical account of different learning theories. The students' summaries of such texts included a number of Micro-genres such as a Descriptive Report or Recount. These Micro-genres are described in the following section.

The Summary of Article stage is followed by the Analysis of the Article[1]. This stage has the Point, Elaboration structure, and frequently makes links to related research.

For example:

Macro schematic stages	Sub-stages	Excerpt from Student 2, April 2001, Grade: Credit
ANALYSIS OF ARTICLE (link to related theories)	Point Elaboration Point	Another constructivist, Piaget, supported the previous theories through his new cognitive structure, as it generated new possibilities that caused a child to try out new procedures on objects. He found that a longer period of time development involved an increasing awareness of possibilities (Miller, 1993, p. 97). An example of this was when Piaget showed children at the ages of 5-6 a box with one side visible under a cloth; these children accepted a single possibility for the colour of the hidden side – the same colour as the visible side. This supported Porath's opinions as children around this age could only see one possibility: they were either 'smart or dumb'. By the ages of 7-10, children recognised multiple, though limited, possibilities and at the age of 11-12, children realised that possibilities were unlimited (Porath, 1997).

The final schematic stage is the Implications for the Classroom. A number of the tutors' comments on the students' texts suggest that the Implications stage is an obligatory stage of the genre. For example:

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[1] Initially this stage was identified as Evaluation of the Article. However, the results for schematic staging show that in seven of the fourteen texts students evaluated the journal article itself in this stage. That is, they commented on the logic of the argument, the research process, the overall cohesiveness of the article, and so on. Interview data and marker commentary suggest that this strategy did not correspond to the expectations of the tutors, and that in the more successful texts there was very little evaluation in the form of making a judgment of the article. Therefore the stage has been called 'Analysis of the Article'.

(Tutor's comment on Student 3's text, April 2001).

In addition, you need to look closely at the links that can be made with classroom practice.

(Tutor's comment on Student 4's text, April 01)

I would have liked to see further development of the section on practical implications.

The Implications stage also functions as the conclusion to the Evaluative Account.

For example:

Macro schematic stages	Sub-stages	Excerpt from Student 6, April 2001, Grade: High Distinction
IMPLICATIONS	Point Elab. Recommen-dations	While it is important for students to conform to social norms it is also important for them to separate their feelings from those portrayed in a text. Not all texts will portray the reader's opinions and values. Teachers must recognise that students' moral values can hinder their comprehension of some texts. Children must be taught to separate themselves from a text and recognise the values and attitudes portrayed by the characters. Teachers must explicitly teach comprehension they should make children aware of priority statement and evidence within a text. They should also teach children to recognise and empathise with characters emotions in the same manner they would when dealing with real-world experiences. This could be achieved by conducting debates where students use information from a text to argue an issue or present a case. Students may be able to empathise with characters if they were involved in role-plays using the text to present the characters personality. Teachers must use strategies that will help children acknowledge that information in texts will not always reflect their moral ideology. *continued*

Evaluative Accounts share many of the language features of Expositions and Discussions, as identified in Table 6.3. As with the students' Expository and Discussion texts, their Evaluative Accounts included a number of Micro-genres. The language features of these Micro-genres are detailed in the next section.

6.5   MICRO-GENRES

The function of the Macro-genre frameworks was to identify the Macro-genres of the data collected and their schematic stages and sub-stages. The preliminary analysis however, showed that other genres were present in the texts. These genres, which

after Martin (1992) are referred to as Micro-genres in this study, are distinct from the Macro-genres' schematic stages and sub-stages in that they have their own internal schematic structure.

Table 6.3 provided an overview of the most common genres in educational contexts. Such a table, however, needs to be supplemented when researching the genres of a discipline specific context, as the discursive practices and epistemologies of disciplines are two significant features which distinguish the disciplines from each other.

In addition to the genres in Table 6.3, the following Micro-genres as they occur in the context of primary teacher education were identified. These are Empirical Account, Historical Account, Exemplum, Descriptive Report and Taxonomic Report. These genres are described below as they occur as Micro-genres in the students' text.

6.5.1 Empirical Account

The social purpose of an Empirical Account is to provide a record of an experiment as evidence for a Point within an Argument. The term 'Account' as a generic label is borrowed from the genre-theorists' work in secondary school history writing (NSW Department of Education 1996). In that context, a Historical Account refers to a text whose social purpose is to record and explain events. In the context of primary teacher education, the causative dimension of the texts occurs in the Orientation, wherein the reasons for the experiment are given. This is followed by the stages of: Recount of Experimental Procedure, Report of Findings and an Evaluation. The Evaluation has the dual function of making a judgment of the significance of the experiment's findings, as well as making a Point for the Argument in the environment of the Macro-genre.

For example: EMPIRICAL ACCOUNT

SCHEMATIC STAGES & LANGUAGE FEATURES	Excerpt from Student 4, 1999, High Distinction
Orientation (reason for the experiment) *causative and conditional relations* **Recount of experimental procedure** *past tense, passive voice, material processes, specific participants, some sequential organisation* **Report of findings** *relational processes, present tense, projecting processes, generic participants, abstract participants* **Evaluation** *relational processes, amplification, comparatives*	To refute the sceptics' criticisms (being that identical twins are mostly raised together in the same environment, and are treated in a similar or identical fashion), studies of identical twins raised apart were conducted. The University of Minneapolis study, conducted between 1970 and 1984, and reported by DiLalla et al. In 1996, took a sample of 217 pairs of identical twins reared together, 114 pairs of fraternal twins reared together, 44 pairs of identical twins reared apart, and 27 pairs of fraternal twins reared apart. For the twins reared apart, the median age for separation was 2 ½ months, and the median length of separation was almost 34 years. The results shown on pages 494-498 of Weiten (1998) show that identical twins, even when reared apart, still have more similarities in their personalities than fraternal twins who are raised together in the same environment. This is strong evidence that genetics have a large role in personality development. This "sophisticated statistical procedures" (Weiten, 1998, p. 497) used in the study found that heredity had the greatest influence on an individual's personality, followed by individual experience. The influence of family environment was found to be small and negligible. These results led the researchers to declare that "personality differences are more influenced by genetic diversity than they are by environmental diversity." (ibid., p. 498)

(N.B. All text excerpts are unedited)

6.5.2 Historical Account

As noted above, in the context of history writing a Historical Account refers to a text whose social purpose is to record and explain events (NSW Department of Education 1996). In the context of primary teacher education, Historical Accounts have the social purpose of recording and explaining changes in educational practice. The change can refer to such events as changes in policy or the implementation of teaching innovations. The purpose of the initial stage, the Orientation, is to name the change or innovation and to explain the reason for this occurrence. The Record of Changes stage lists the consequences or outcomes of the change or innovation. The final stage is the Deduction in which generalisations about the innovations and their consequences are made.

For example: HISTORICAL ACCOUNT

SCHEMATIC STAGES & LANGUAGE FEATURES	Excerpt from Student 4, 1999, High Distinction
Orientation *Temporal circumstances, past tense & abstract material processes. Causative relations* **Recount of Events** *Concessive and causative relations, past tense and abstract material processes, passive voice, technical terms* **Deduction** *Relational processes, persuasive language*	During the 1980s an educational discourse developed which sought to enhance girls' post-school options by altering their relationship to so-called 'non-traditional' school subjects (mathematics, science, technology and manual arts). When given a choice, girls were encouraged to select such subjects, and to make 'non-traditional' choices within such subject groupings, such as physical rather than biological sciences, higher-level, rather than lower-level mathematics. Teachers developed educational means by which girls achieved greater success in such subjects when they became part of the compulsory school curriculum. Further, girls became empowered through the reconstruction of the process and contents of the curriculum. (Kenway, cited in Blackmore and Kenway, 1993, p. 83). The early 1970's saw the curriculum reviewed and eventually a new curriculum was introduced. Education was now not just something to pass the time for females, but gave them the chance to pursue a career that they wanted, not to become just a housewife.

6.5.3 Exemplum

For the trainee teachers, one means of linking theory and practice in their written texts was in an Exemplum. Plum (1988, cited in Eggins & Slade 1997) describes Exemplums as texts whose purpose is to comment on the significance of an event for the context in which the event is told. In the learning environment of primary teacher education, incidents in the classroom are described to reinforce the point being made. In the student texts, Exemplums occur as part of the Elaboration in the sub-stage of an Argument. Plum's schematic stages of Orientation^Incident^Interpretation (ibid) have been adopted in this study.

For example: EXEMPLUM

SCHEMATIC STAGES & LANGUAGE FEATURES	Excerpt from Student 5, June 01, Pass
Orientation *Generic participants, present tense, range of process types* **Incident** *Temporal circumstances, past progressive and past tense, specific participants, built up around a sequence of events* **Interpretation** *Causative elements such as conjunctions*	As all children remember things differently, all children are motivated differently also. A teacher has a large effect on students in regards to their motivation (Jaasma & Randall, 1999). The reactions that a teacher has to a child may affect their self-esteem, and in turn their motivation. On my 2nd year practicum, I was trying to help a young girl with her worksheet. She got to a part where you had to fill in the missing words from the sentence. She refused to do it after several attempts to help her, and then she said, "I can't do it, Mrs J. said it's very hard and I might have trouble and I couldn't do it last week. I'm not doing it". This child had been told that last week she didn't do the exercise very well and so she believed that she was not going to be able to do it well this time. She had no motivation to do it because it she was told that she was going to have trouble with it.

6.5.4 Descriptive Report

Generally speaking, reports function to describe the way a class of things are. In primary teacher education, Descriptive Reports tend to describe phenomena related to child development and related theoretical approaches. In the area of child development, as in most academic discourse communities, there can be conflicting theoretical perspectives and interpretations of natural and social phenomena. Therefore, 'reporting on the way things are' involves describing a theoretical interpretation and explanation of a phenomenon. In this study such a text is referred to as a Descriptive Report rather than an Explanation, as the function of the text is to describe the theory or phenomena, even though the theory may provide explanations of processes to do with development.

The initial stage of a Descriptive Report is the Classification, in which the theory's focus is named. This is followed by a description of the theory, its explanations for social and physical processes, as well as interpretive descriptions of phenomena. Since the descriptive stage of the report often contains projecting processes reporting the theorist's interpretation of phenomena, this schematic stage of the report is referred to for the purposes of this study as Description of Theory/ Belief Statements.

For example: DESCRIPTIVE REPORT:

SCHEMATIC STAGES & LANGUAGE FEATURES	EXAMPLE
Classification Relational and material processes, classifying nominal groups **Description of Theory/ Belief Statements** Some causative structures to explain procedures; projecting mental processes with specific human participants. Projected relational processes	Vygotsky's sociocultural-theory focuses on how culture (values, beliefs, customs and skills of a social group) affects the next generation" (Berk 1997 p.27). Social interaction and dialogue with more knowledgeable members of society help children develop the ways of thinking and behaving that make up the community's culture (Berk 1997 p. 27). Vygotsky believed social interaction and adult regulation are essential to the child's cognitive development. He also believed that humans are born with simple abilities – to see, hear, touch, and remember and to demand interaction. What they see, hear, touch and remember, and the interaction they obtain depends on their environment.

6.5.5 Taxonomic Report

In the genre descriptions of history writing, Descriptive Reports are distinguished from another type of report which functions to describe "a number of classes of things in a system of classification" (NSW Department of Education 1996: 102). The latter are referred to as Taxonomic Reports. Phenomena can be classified in part-whole taxonomies or in taxonomies of types (class-subclass). The taxonomy in the text below is a taxonomy of types, as it classifies different types of development.

The function of the Classification is to classify and name the classes of things or parts (NSW Department of Education 1996). The language features of this stage are relational process types and processes of being. The following stage, the Description of Parts (for part-whole taxonomies) or Description of Types (for class-subclass taxonomies), is divided into sub-sections, each of which describes one component of the taxonomy. The language features of this stage include relational processes, present tense, and some technical lexis. As with the Description stage in a Descriptive Report, the Description of Parts stage can include projecting mental processes and specific participants which report a theorist's perspectives or beliefs.

For example: TAXONOMIC REPORT (taxonomy of types)

MICRO-GENRE	SCHEMATIC STAGES & LANGUAGE FEATURES	EXAMPLE
TAXONOMIC REPORT *To describe phenomena in a system of classification*	**Classification** *Relational process, present tense* **Description of Types** *circumstances of angle, projecting mental processes, relational processes, complex nominal group structures, rhetorical markers to organise information*	Development can be classified into three main areas, biological, cognitive and socioemotional (Santrock, 1996, cited Berk, 1997). In regard to Lysaght, (1997) ideas on biological development, biological development includes changes in aspects of physical development, the influence of genes, and the effects of hormonal changes'
	Description of Types	The cognitive processes have been researched in lengthy detail by such theorists as Piaget and Vygotsky. The aspects of cognitive development 'involve changes in thinking, learning and language.' (Lysaght, 1999, p.3)
	Description of Types	The third area that plays a role in development is socioemotional processes, which I feel involves the features that shape our identity, the emotional feelings we feel towards other individuals and the way we deal and interact with others. These ideas can be supported by Lysaght (1999). Socioemotional processes 'include our relationships with others, our emotional life and unique identity we each develop'.

This concludes the description of the analytical framework for the Macro and Micro-genres. The following section details how the Macro and Micro-genre frameworks were applied to the student assignments.

6.6   ANALYTICAL PROCEDURE

In expository writing arguments tend to be organised into paragraphs with each paragraph containing an argument in support of the thesis. Therefore the paragraph divisions in the student texts were seen as a starting point from which to investigate the students' organisation of their texts. The preliminary step in analysing the students' texts was to make electronic copies of the hard copy assignments, in which the orthographic division of the texts into paragraphs was maintained. The paragraphs were numbered for ease of reference. None of the texts was edited for

grammatical, spelling, referencing or punctuation infelicities. As the ethics guidelines required anonymity for the student participants, the texts were catalogued by number rather than by the students' names. The students' grades were also recorded.

Once the texts had been typed, they were classified according to the Macro-genres' framework. This decision was made primarily on the presence of rhetorical strategies occurring in the first paragraph. For example:

DISCUSSION

Par. No.	Student 4, 1999, High Distinction	Sub-stages	Schematic Stages
1	The personality of a child is a very important battleground in the nature – nurture debate. How much a child is the product of its genetic inheritance, or how it is the product of its experiences and environment will probably never be conclusively argued. Nevertheless, how one perceives the topic will affect how, and in what environment, the child is raised from the moment of birth.	ISSUE PREVIEW ISSUE	ISSUE

The lexicogrammatical evidence used as the basis for assigning this text as a Discussion is the lexical choices of *battleground* and *debate* indicating a contested issue, while the logical relation *or* indicates the two points of view as outlined in the Preview. The closing sentence functions as a coda to reinforce the significance of the Issue.

The next task was to determine the functional stages through which the texts moved to achieve their social purpose. At this stage it was necessary to refer to both the Macro and Micro-genre frameworks, as the Micro-genres sometimes interrupted the Macro-genre stages. For example in some Expositions or Discussions, the presence of a Micro-genre did not always function internally as part of the Argument stage. At this stage of the analysis, a number of issues became apparent. One was the issue of identifying Micro-genres. Many of the students' Elaborations contained fragments of Explanations, Descriptive Reports as well as several other Micro-genres. These elements were only recognised as Micro-genres when they displayed their own internal schematic structure. The presence of these elements at the clause level of

analysis and their function will be discussed in the following chapter on experiential meanings.

Another issue was the need to highlight in the coding process elements in the students' texts that only superficially fulfilled the purpose of the schematic stage. In such cases, the schematic stage was placed in inverted commas, for example, "Thesis". In addition, arguments in the students' texts that were only implicitly related to the Thesis rather than explicitly were coded as ARGUMENT (implicit). Other notational elements in the generic analysis are that the Micro-genres and their schematic stages are identified in the generic analysis by bold face type in upper case for the genre (e.g. **ACCOUNT**) and lower case for the sub-stages (e.g. **Orientation**). In contrast the sub-stages of the Macro-genres are given in a lower case unbolded typeface (e.g. Point), and the schematic stages in upper case (e.g. ARGUMENT). The genres themselves are referred to in my text with initial capitals, for example, Discussion.

On completion of the generic analysis for the fifty-eight texts, the results were recorded at the level of Macro-genre as well as for internal schematic structure. The results for Macro-genre are provided in this chapter (Tables 6.4.1 – 6.4.3), while the results for schematic structure are provided in Appendix C. In the discussion of these results, the student texts are referred to in clusters, that is, lower grade range texts and higher grade range texts. The lower grade range includes the Fail to Credit grades, while higher grade range refers to the Distinction and High Distinction texts.

Following the discussion of the Macro-genre and Micro-genre results, there is a brief discussion of one aspect of the Evaluative Account genre. This is due to the presence of significant problems in a number of the students' Evaluative Accounts. Analytically, this discussion draws on Appraisal theory (for example, Martin 2000), which is elaborated upon in this chapter in the section on Evaluative Accounts. Methodologically, a small number of successful texts are compared with a small number of unsuccessful texts. In the final section of the chapter, the discussion of the register variables refers in general to the findings in the corpus, rather than focussing

on field, tenor and mode construals in specific texts. The purpose of this broad approach, as well as the discourse-analytical discussion of the findings for Macro and Micro-genres, is to build up a broad description of the corpus before more intricate analysis of individual texts is undertaken. Clause level analysis is undertaken in the discussion of lexicogrammatical choices in the students' texts in Chapter Seven.

6.7   RESULTS AND DISCUSSIONS

In this section the results for each aspect of the inquiry into the students' generic choices are presented together with the discussion for that aspect. A discussion of the implications of the overall findings forms the conclusion to this chapter.

6.7.1   Macro-Genres and Schematic Structure

The students participating in this study wrote Expositions, Discussions or Evaluative Accounts in response to their assignment tasks. The results for the essay assignments and choice of Macro-genres are shown in Tables 6.4.1 (1999), 6.4.2 (2000) and 6.4.3 (2001). For the journal article review assignment, all the students wrote Evaluative Accounts. Consequently, the Macro-genre results for the journal article review are not shown in a tabular form.

A broad but significant finding from the genre study is that none of the students responded to the assignment tasks by writing texts that were not predictable from the context of situation or culture. Assignment tasks that ask analytical questions, or instruct students to discuss an issue, generally require responses which present logical arguments and argue a position. Genres such as Narratives and Procedures would not have fulfilled their social purpose in this educational context. This broad finding reaffirms the view in genre theory that there is a systematic correlation between genre, context of situation and context of culture.

In response to the essay assignment tasks (provided in the top of the results tables), the results recorded in Tables 6.4.1, 6.4.2 and 6.4.3 show that students wrote either

Discussions or Expositions. For choice of Macro-genre, the 1999 results (Table 6.4.1) show that the Discussion genre predominated in the lower grade ranges as well as in the higher grades. That is, seven out of eight Fail to Credit grade texts were Discussions, and six of eight Distinction to High Distinction texts were likewise Discussions. The predominance of the Discussion is not surprising considering the assignment required the students to *discuss the evidence for each of these positions*. In other words, students were expected to canvas a range of viewpoints and conclude with a statement of their informed position. However, as Table 6.4.1 shows, Expositions were also a possible response to this assignment task. In the second year results (Table 6.4.2), the Exposition genre marginally predominated in the lower grade ranges with five Expositions compared to four Discussions, whereas in the high grade range Expositions featured exclusively in the five texts. As in the first year findings, students wrote either Discussion or Exposition genres in response to 'discuss' type essay questions. Indeed three of the five higher scoring Exposition texts (Students 2, 4 and 13) were responses to a *'discuss'* type essay question, as were the five Credit scoring Expositions. Table 6.3.3 shows the findings for the third year. In that year, students were required to answer the question, *What theory or theories of children's thinking and learning are the most defensible for your future role as a primary educator?* The foregrounding of a question invites a response that presents a thesis supported by a series of logical arguments. The findings show that approximately half the students in the lower grade range responded in the Exposition genre, while the other half responded in the Discussion genre. In the high grade range the Exposition genre predominated with five Expository texts and two Discussions.

Thus far the findings on Macro-genres are that essay assignments can result in either Discussion or Exposition genres. This broad finding has relevance for writing pedagogies which confidently prescribe monolithic essay structures from types of essay questions (Bate 1979; cf. Peters 1985). The findings also allow some comment on the question asked at the beginning of this chapter: *What, if any, are the distinctions in generic choices between low scoring texts and high scoring ones?* One hypothesis was that the Exposition genre would predominate in the high-scoring

texts. The findings from the second year data support this hypothesis, as Expositions appear exclusively in the Distinction and High Distinction grades. It is also supported in the third year data, as five of the seven high scoring texts are Expositions. In the first year data, however, both Expositions and Discussions are evenly distributed across the grade ranges. Therefore the findings suggest that while the Exposition genre does predominate in the high scoring texts, Discussion texts are also valued, particularly in the first year of study. The presence of the Discussion genre begs the question, why is it valued in this disciplinary context.

One explanation for the valuing of the Discussion can be provided by the genre's schematic structure. To achieve its social purpose, the genre moves through a range of viewpoints on a particular issue, theory or phenomenon. In other words, the students writing Discussion genres compile their own synopses of different and sometimes conflicting theoretical approaches to do with child development. From the perspective of learning, the process of canvassing different theoretical perspectives allows the students to build up a broad knowledge base of the discipline. Therefore the textual evidence suggests that in undergraduate teacher education, tutors value not only writing practices that show logical argument and synthesis, they also value evidence of breadth of knowledge and understanding, particularly in the first year of study. While this finding may seem in hindsight a fairly obvious one, it appears to be a dimension of disciplinary learning through writing that is an implicit goal in undergraduate teacher education. That is it is implicit because it is a dimension to learning that was not stressed in the tutor interviews, nor was it elaborated upon in the subject guidelines.

Table 6.4.1 Results for choice of Macro-genre (1999 assignment)

1999 Assignment: The age old Nature-Nurture controversy about the underlying causes of the course of development continues today, with some theorists attributing the course of development to genetic influences while others believe that the complex forces of the environment are responsible. Discuss the evidence for each of these positions and indicate how this debate will influence your work.

	Grade awarded for assignments				
	Fail	**Pass**	**Credit**	**Distinction**	**H. Distinction**
Student 1*		Discussion			
Student 2				Discussion	
Student 3			Discussion		
Student 4					Discussion
Student 5			Discussion		
Student 6				Exposition	
Student 7#					Discussion
Student 8			Discussion		
Student 9				Discussion	
Student 10				Exposition	
Student 11		"Discussion"			
Student 12		Discussion			
Student 13					Discussion
Student 14		Exposition			
Student 15				Discussion	
Student 16			Discussion		
TOTAL SS = 16	**TOTAL F-C: Discussion = 7, Exposition = 1**			**D-HD: Disc. = 6, Exp. = 2**	

*Withdrew from studies, #withdrew from mainstream studies.

Table 6.4.2 Results for Macro-genres (2000 assignment)

2000 Assignments
Students selected topics from various assignment questions including both 'discuss' type questions as well as analytical questions..

	Grade awarded for assignments				
	Fail	**Pass**	**Credit**	**Distinction**	**H. Distinction**
Student 2					Exposition
Student 3			Discussion		
Student 4					Exposition
Student 5			Discussion		
Student 6			Exposition		
Student 8	"Discussion"				
Student 9			Exposition		
Student 10				Exposition	
Student 11			Exposition		
Student 12			Exposition		
Student 13				Exposition	
Student 14			Exposition		
Student 15				Exposition	
Student 16			Discussion		
TOTAL SS = 14	**TOTAL F-C: Discussion = 4, Exposition = 5**			**D-HD: Disc. = 0, Exp. = 5**	

Table 6.4.3 Results for Macro-genres (June 2001 assignment)

2001 Assignments: What theory or theories of children's thinking and learning are the most defensible for your future role as a primary educator? In order to answer this question, you must critique all the theoretical perspectives in this subject as the basis for your position.					
	Grade awarded for assignments				
	Fail	**Pass**	**Credit**	**Distinction**	**H. Distinction**
Student 2				Exposition	
Student 3			Discussion		
Student 4					Exposition
Student 5		Exposition			
Student 6					Exposition
Student 8			Exposition		
Student 9					Discussion
Student 10					Discussion
Student 11			Exposition		
Student 12			Discussion		
Student 13			Discussion		
Student 14				Exposition	
Student 15				Exposition	
Student 16			Discussion		
TOTAL SS = 14	**TOTAL F-C: Discussion = 4, Exposition = 3**			**D-HD: Disc. = 2, Exp. = 5**	

To further explore the question *What, if any, are the distinctions in generic choices between low scoring texts and high scoring ones?* it is necessary to refer to the tables which show the results for schematic structure (see Appendix C). The tables in themselves have limitations on how much they can reveal about students' control of schematic structure. That is, the results in the tables attest to the presence of the schematic stages, but can provide little insight on the merits or deficiencies of each stage. Despite this, the results allow a number of observations to be made in response to the question on distinctions in generic choices. Firstly, to refer to students making generic choices suggests a level of conscious knowledge about text structure and purpose that novice writers in an unfamiliar context may not have. Yet the results for the Exposition and Discussion genres show that, on the whole, the students were familiar with the social purpose and staging of these genres, and that they were able, with varying degrees of success, to write Expositions and Discussions. From the total of forty-four Exposition and Discussion texts, only two of these texts failed or only marginally succeeded in achieving their social purpose. These were the 1999 text of Student 11, which received a Pass (minus) grade, and Student 8's 2000 text, which received a Fail grade. The schematic structure of these texts is shown is Table 6.5.

Table 6.5 Schematic structure of two unsuccessful/marginally successful texts

P.	STUDENT 11/99 (P-) "DISCUSSION"		STUDENT 8/00 (F) "DISCUSSION"	
	MICRO	MACRO	MICRO	MACRO
1	Issue	ISSUE	"Preview"	"ISSUE"
2	Definition		"D. REPORT Description x3 "Point" Elaboration Point Point Point Point Elaboration "Point"	"ARGUMENT" viewpoint
3	Definition		"Point" Definition D. REPORT Description "Point" Elaboration Point	"ARGUMENT" viewpoint ARGUMENT
4	TAXONOMIC REPORT: Classification		Elaboration Point Elaboration Point	"ARGUMENT" ARGUMENT
5	Description of Parts		Elaboration Recommend./ Implications	ARGUMENT
6	Description of Parts		Point Elaboration Recommend./ Implications	ARGUMENT
7	TAXONOMIC REPORT: Description of Parts		Summary Implications for Classroom "Position"	"POSITION"
8	Point	* not a point for either argument		
9	Elaboration			
10	Point	ARGUMENT Implicit – view		
11	Elaboration Point	ARGUMENT + view		
12	DES. REPORT B. Statements	ARGUMENT Implicit - view		
13	R. Point	ARGUMENT - view		
14	Point	ARGUMENT - view		
15	TAX. REPORT Classification Des.. Of Parts Explanation			
16	DES. REPORT B. Statements Explanation Description	ARGUMENT Implicit -view		
17	Position	POSITION		

As Table 6.5 shows, these texts contain the obligatory Macro-schematic stages of the Discussion genre; however, these stages are inadequately realised. Student 11's text only marginally fulfilled its social purpose, as it did not adequately canvas the points of view on the Issue. That is, it contains just one Argument in support of one point of view, and only two Arguments in support of the opposing point of view.

Furthermore, the Micro-schematic structure of this text shows the predominance of genres whose function is to describe and classify, rather than to persuade through logical argument. Similarly, Student 8's 2000 text fails to adequately and accurately present the Issue of *the extent to which schools perpetuate gender divisions in society,* opting inadvertently to discuss, amongst other things, whether there are gender divisions in society.

Critically evaluate the extent to which schools perpetuate gender division in society. Excerpt from Student 8's 2000 text (Fail)	Macro schematic stages
Throughout life most people would have heard people declare 'let boys be boys and girls be girls', but do the people realise that they are stereotyping boys and girls into gender divisions? What are gender divisions? Are boys and girls introduced to gender divisions at school and are the schools continuing to push gender divisions even if they do not realise? Boys and girls may have different bodily organs and have different appearances but should this associate them to a certain division and continue on into society? Society also shows how gender is divided and in which it is illustrated through the school. Is gender equity forced in schools enough, if not are some students leaning towards their own gender because that is what they believe society wants from them? Throughout this country it can be seen that gender divisions still take place throughout society, for example males are getting paid more when women are in the same jobs as them and women are still stereotyped as the housewife. This is gradually changing but are the schools slowing it down by portraying gender as a male and female world, not a combine one? Reading on will help to answer these questions.	"Issue"

Other problems with this text can be more adequately addressed within the framework of the register variables of field, tenor and mode, which follows this discussion of schematic structure.

There were other instances in the Exposition and Discussion texts in which some of the schematic stages failed to adequately achieve their social purpose. The students and the schematic stages in question are shown in Table 6.5.1 as follows:

Table 6.5.1 Summary of unsuccessfully realised schematic stages in the students' texts

	Student 1*	Student 3	Student 5	Student 8	Student 16
1999	"Position" P+			"Argument" C	
2000		"Position" C-		"Issue" "Argument" Position" F	
2001			"Thesis" P+	"Thesis" C-	"Position" C-

* *discontinued*

The inadequately realised schematic stages occurred in texts from the lower grade ranges of Fail to Credit. These results allow a further generalisation to be made on the distinction between low scoring and high scoring texts. That is, generic structure does play a role in the realisation of successful texts. The results also allow some comment on the question posed at the beginning of this chapter. *What developments occur in students' control of generic structure and realisation of register variables in the writing of first year students, and the writing of the same students in the third year of their studies?* In terms of generic structure, the results suggest that for these students control of generic structure is not consistent. Students Three, Five and Sixteen wrote successful texts from the perspective of generic structure in the first year of study, but experienced difficulties with generic structure in the second or third year of their studies. That is, on the basis of the schematic structure analysis some of these students' schematic stages inadequately realised their social purpose. Therefore in terms of control of schematic structure, on the evidence from this corpus learning to write does not appear to be a continuous process of development, rather a discontinuous one with improvements and regressions. However, to consolidate this claim it would be necessary to expand the number of texts examined.

The discontinuous nature of writing development is most apparent when students are required to write in an unfamiliar genre. The students' evident familiarity with the Exposition and Discussion genres is no doubt due to the presence of these genres as learner genres in a range of subjects in the secondary school curriculum (Kalantzis & Wignell 1988; NSW Department of School Education 1996). This is in stark contrast to the students' control of the more unfamiliar Evaluative Account (for the assignment question see Table 6.1). From the most obvious measure of success, the grade awarded, half of the students received their lowest grade or equal lowest grade in the three years of the study for their Evaluative Accounts (Table 6.2). Only Student 15 was able to improve her grade for this assignment. In terms of schematic structure, seven of the fourteen texts were only marginally successful in developing each of the schematic stages of [Orientation], Summary of Article, Analysis of Article, Implications for Classroom Practice. These were the texts of students 5 (P-), 8, (P-), 11 (P-), 12 (P), 13 (C), 14 (C), and 16 (P), (see Appendix C). A major

problem was that there was an imbalance between the Summary stage of the genre and the Analysis stage, with the Summary predominating and the sub-stages of the Analysis containing only a minor Point with a Reported Elaboration, or no Elaboration. In the tutors' written comments on many of these texts, a recurring phrase was *"you have simply summarised the article"*. Examples of these students' schematic structure together with their tutors' comments are given in Table 6.6. In addition, students 8, 11 and 12 relied on point form to summarise the article, a strategy not condoned by the markers as is evident in the comments in Table 6.6.

Most significantly many of these students in their Analysis stages evaluated the journal article as a text, commenting on the research process, the cohesiveness and logic of the text, the accessibility of the text to the reader and so on. Such instances in the students' texts are coded in the results as: "ANALYSIS", *"comment on research process"*, that is, highlighted by inverted commas. While none of the tutors' written commentary explicitly criticised this interpretation of 'review a journal article', the students' texts were criticised in general for their failure to *"analyse and review"* the article in question (see Table 6.6). These criticisms are implicit evidence that the students' Analyses were inappropriate for the task. Furthermore, in the tutor interviews one tutor commented as follows:

> *I remember[1], the students used to really think that critically analyse meant 'be critical of', 'criticise', you know. They didn't, they sort of, they were trying to pull it apart, with the way in which the research was conducted. And I'd say well, there are lots of different ways to conduct research, and there are ways to grapple with these limitations. You can't do everything in a research study. And the bottom line is that people out there who know a lot more about this subject than you or I do reviewed this for it to get into the journal in the first place. So it must be reasonably ok. So it's really hard for them to come to terms with that too. Sometimes they are being asked to do things that are beyond the scope of their experience. They would be beyond the scope of many of the academics. [Tutor 4, March 2001].*

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[1] The tutor is referring to the previous year's assignments, as she had not yet marked the 2001 journal article review.

Table 6.6 Schematic structure and tutor commentary on three marginally successful texts

P.	STUDENT 5 (P-) EVALUATIVE ACCOUNT		Tutor's written comments
	MICRO	MACRO	
1	Summary of Article	SUMMARY OF ARTICLE	*There are a number of problems with your paper. You have presented some aspects of the article but have simply referred to terms in a descriptive manner, rather than analysing the way in which the author used them. You have written in very general terms about motivation but have not discussed issues raised in the article such as how levels of motivation operate over short or long periods of time. You need to look more closely at the article itself, before exploring other books and journal articles that will enable to analyse the issues that have been raised. Your written presentation is reasonably good, but attention needs to be given to spelling, punctuation and references.*
2	Summary of Article	SUMMARY OF ARTICLE	
3	Summary of Article	SUMMARY OF ARTICLE	
4	Point/ Elaboration Implications	"ANALYSIS" comment on research process	
5	Point Elaboration	"ANALYSIS" comment on research process	
6	Point Elaboration	"ANALYSIS" *implicit* link to related theory	
7	Point Elaboration	"ANALYSIS" link to theory	
8	Point/ R. R. Elaboration Point	ANALYSIS OF ARTICLE & SUM. OF SEC. ARTICLE link to research	
9	Point/ Elaboration (Reiteration)	IMPLICATIONS FOR CLASSROOM	

P.	STUDENT 8 (P-) EVALUATIVE ACCOUNT		
1	Preview	ORIENTATION	[MARGINAL COMMENT] *Avoid point form in essays. Explain the significance of each of these questions.* [SUMMATIVE COMMENT] *Your paper does not really address the task set for the assignment. You have simply summarised the article, under each heading that had been used, without giving thought to analysis and review. You need to look more closely at how creativity may be defined and how it may be used with children. You also need to look at differences in definitions of creativity for adults and children, as well as the various models that exist to encourage and support creativity in the classroom. Your written presentation also needs attention – grammar, sentence construction and overall essay construction. Please see me.*
2	Summary of Background	SUMMARY OF ARTICLE	
3	Point	"ANALYSIS"	
4	Definition		
5	Summary of Background		
6	Point	ANALSIS link to res.	
7	Summary of Background		
8			
9			
10	Point/ Elaboration	"ANALYSIS" link to res.	
11	Summary/ Point	SUM./ "ANALYSIS"	
12	Summary of Methods	SUMMARY	
13			
14			
15			
16	Summary of Findings Point	"ANALYSIS" comment	
17	Summary of Findings	SUMMARY	
18	Point/ Elaboration	"ANALYSIS"	
19	Summary of Discussion	SUMMARY	
20	Summary Point	IMPLICATIONS	
21	Point	IMPLICATIONS	
22	Summary of Conclusion	SUMMARY	
23			

Table 6.6 Schematic structure and tutor Commentary on three marginally successful texts (continued)

P.	STUDENT 11 (P-) EVALUATIVE ACCOUNT		
1	Overview	SUMMARY OF ARTICLE	[MARGINAL COMMENT] *avoid using point form and explain these ideas.* [SUMMATIVE COMMENT] *There are a number of problems with your paper. You have simply summarised rather than analysed and reviewed the article written by Haenen. In addition, you have not clearly explained the concepts to which the author has referred nor have the other references you included helped in this regard. You need to demonstrate a good understanding of the article and you also need to be able to use other resources to help develop the points that are made. You written presentation also needs attention – spelling, grammar, and referencing. Wider range of references would have been useful. Please see me.*
2	Summary of Methods	SUMMARY OF ARTICLE	
3	Summary of Methods	SUMMARY OF ARTICLE	
4	Summary of Methods & Findings	SUMMARY OF ARTICLE	
5	Point	ANALYSIS OF ARTICLE	
	R. Elaboration		
6	Summary of Conclusion	SUMMARY OF ARTICLE	

(Examples of a successful Evaluative Account as well as an unsuccessful Evaluative Account are provided in Appendix D.)

The tutors' comments on the concept of analysis in the students' texts are a stark reminder that the concept of 'critically analyse' is a major cause of confusion for students. In genres such as Evaluative Accounts, in which the analysis component is foregrounded as a schematic stage, student confusion about 'critically analyse' becomes particularly apparent. As Table 6.6 shows, the Analysis stages of students 5 and 8 consist almost entirely of a critique of the article as text and of the research process. Such 'Analysis' stages occurred in another five of the fourteen texts. Since this interpretation of analysis occurred in half of the students' texts, this issue is revisited in greater detail at the close of the sections on Macro and Micro genres.

Thus problems with schematic stages and staging occurred in a significant number of the Evaluative Accounts. This is in contrast to the more familiar Exposition and Discussion genres in which schematic stage problems occurred in only six of the forty-four student texts. This finding provides firm evidence that writing in unfamiliar genres poses problems to students in addition to text-organisational ones. When the social purpose of the genre, or the purpose of the schematic stages is only

partially understood by students, major disruptions occur in the students' texts, and consequently in their learning through writing. This issue is taken up in the discussion of the implications of the findings at the close of the chapter.

A final comment on schematic staging regards the presence of the sub-stages Reported Point and Reported Elaboration in the students' Macro-genre texts. As indicated in the description of the analytical tools, a significant number of the Points in the students' Argument schematic stage were arguments or belief statements of authorities in the field. Such Points have been identified as a sub-stage Reported Point, or Reported Elaboration. The results for Macro and Micro schematic structure (Appendix) show that Reported Points and Reported Elaborations were a feature of both the lower scoring texts as well as the higher scoring ones. Furthermore, as sub-stages they occurred across the Macro-genres and across the three years of study. For example in the 2001 Discussion and Exposition texts, at least one Reported Point or Reported Elaboration occurred in three of the six higher scoring texts, and in four of the seven lower scoring texts (Appendix C). As suggested earlier, the reporting of knowledge claims appeared to function as a major discourse-organisational strategy to present arguments for the Thesis. Reported Points were one means through which students introduced new points, made counter points, and built up evidence in support of their argument.

To sum up the findings on Macro-genres and schematic structure several broad findings are evident. The first of these is to do with distinctions in generic choices between low scoring texts and high scoring ones. One finding is that Exposition genres predominate in high scoring texts, even in response to 'discuss' type essay questions. Another finding is that generic structure does play a role in the realisation of successful texts. Inadequately realised schematic stages occurred in the lower grade ranges in the Discussion and Exposition genres, and were particularly evident in the Evaluative Accounts. The second area of findings has to do with developments in students' control of generic structure over the three years of their studies. The findings suggest that from the perspective of generic structure, writing development is a discontinuous process with improvements and regressions. Some students in the

early period of their studies were able to write Expositions and Discussions that adequately moved through the obligatory schematic stages. However, the same students experienced difficulties with these stages in the second or third year of their studies.

In terms of students' learning through writing, the choice of Macro-genres provides insights on what learning to mean involves in this particular educational context. The assignment tasks aimed to develop the following thinking and learning processes i) to develop a logical argument, ii) to present a balanced discussion of different viewpoints and make an informed decision, iii) and to engage with recent research and assess the implications for the classroom. For undergraduate students, these thinking and learning processes are the foregrounded valued knowledge making practices of the discipline. However, they present an incomplete picture of the learning processes the students draw on in their writing. For a more detailed understanding of written genres as a means of learning, it is necessary to turn to the results for Micro-structure. These results are compiled with the Macro-schematic structure results and are included in Appendix C.

6.7.2 Micro-genres

The results for Macro-genre schematic structure show that the schematic stages can include other genres such as Recounts and Reports functioning as Micro-genres in a Macro-genre structure. As the results (Appendix C) show, the students included a number of Micro-genres in their Exposition, Discussion and Evaluative Account texts. These Micro-genres are predominantly of a descriptive orientation. That is, the Descriptive Reports and Taxonomic Reports function to describe and classify phenomena, while other ostensibly descriptive genres have an explanatory dimension. These include the genres of Empirical Account, Historical Account, Evaluative Account, and Exemplum. Table 6.7 shows the distribution and frequency of Micro-genres in the student texts.

The most common Micro-genre in the students' texts was the Descriptive Report, occurring in six students' texts in 1999, two students' texts in 2000, five in April 2001 and three students' texts in June 2001. Taxonomic Reports also featured across the three years of study, occurring in four first year texts, one 2000 text, two April 2001 texts and three June 2001 texts. Other Micro-genres featured sporadically, suggesting the field played an important dimension in selection of Micro-genres. For example, in the first year 'nature nurture' assignment, students included Empirical Accounts. In the Macro-genre environment of the exposition, the Empirical Account functioned to provide tangible evidence in support of one of the perspectives on the course of child development. In the third year assignment on philosophy of teaching, Exemplums occurred in five of the student texts. Their function was to describe incidents in the classroom to reinforce the point being made in the Macro-genre structure. Explanations as Micro-genres were rare occurring in only one of the April 2001 Evaluative Accounts, and in two June 2001 Exposition and Discussion texts.

Table 6.7 Distribution and frequency of Micro-genres in the students' texts

	1999 Fail to Credit Grade Range Students								Distinction & High Distinction Grade Range Students							
	s 11	s 12	s 1	s 14	s 16	s 5	s 8	s 3	s 9	s 2	s 6	s 10	s 15	s 4	s 7	s 13
Empirical Account		1		3					2	2				2		
Historical Account																
Exemplum																
Taxonomic Report	3	1						1	1							
Descriptive Report		1					7	1	2		1					
Explanation																
Evaluative Account																

	2000 Fail to Credit Grade Range Students									D & H. D Grade Range Students				
	s 8	s 3	s 12	s 11	s 5	s 6	s 9	s 14	s 16	s 10	s 13	s15	s 2	s 4
Empirical Account														
Historical Account				2										
Exemplum														
Taxonomic Report														1
Descriptive Report	2													1
Explanation														
Evaluative Account									2					

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Table 6.7 Distribution and frequency of Micro-genres in the students' texts (continued)

	2001 (April) Pass to Credit Grade Range Students									D & H. D Grade Range Students				
	s 8	s 11	s 5	s 3	s 12	s 16	s 2	s 13	s 14	s 4	s 9	s 10	s 6	s 15
Empirical Account													1	
Historical Account														
Exemplum														
Taxonomic Report						2					1			
Descriptive Report					1			3	1		2			1
Explanation														
Evaluative Account													1	

	2001 (June) Pass to Credit Grade Range Students								D & H. D Grade Range Students					
	s 5	s 8	s 12	s 13	s 11	s 16	s 3	s 14	s 2	s 15	s 4	s 6	s 9	s 10
Empirical Account														
Historical Account														
Exemplum	6	3												
Taxonomic Report		2		2		2			1	1				
Descriptive Report				3		1				1				
Explanation				1	1	2								
Evaluative Account														

In terms of differences between generic choices in low scoring texts and high scoring ones, the findings for Micro-genres suggest that there was little difference in distribution of Micro-genres between the lower scoring and higher scoring texts. As Table 6.7.1 shows, in 1999 approximately half of the lower scoring students and half of the higher scoring students incorporated Micro-genres in their texts. In 2000, approximately one third of the lower scoring and higher scoring students incorporated Micro-genres. In the April 2001 texts, more higher scoring students incorporated Micro-genres, while in June 2001 more lower scoring students incorporated Micro-genres.

Table 6.7.1 Distribution of Micro-genres in lower scoring and high scoring texts

	Number of lower scoring students	Number of higher scoring students
1999	5 out of 8 students	4 out of 8 students
2000	3 out of 9 students	1 out of 5 students
2001 April	4 out of 9 students	4 out of 5 students
2001 June	5 out of 7 students	2 out of 7 students

In terms of frequency of Micro-genres in individual students' texts, there appears to be only a marginal distinction between the low and high scoring texts. Table 6.7 shows that Student 9's high scoring text incorporated five Micro-genres in her 1999 Discussion. This is only slightly lower than Student 8's 2000 text, which incorporated seven Descriptive Reports and received a Fail grade.

Thus far it has been possible to identify a number of differences between low and high scoring texts in terms of generic structure. On the whole, these differences are marginal ones, and are in some instances inconclusive. However, the results do make it clear that genres functioning as Micro-genres in a Macro-genre structure occurred with some frequency in both high and low scoring texts. They also occurred in the early stages of the students' writing as well as in the final year of study.

To gain a greater understanding of the role of the Micro-genres in the students' texts it is necessary to return to the more detailed results shown in the tables for Macro

and Micro-schematic stages (Appendix C). The tables which contain the results for the Discussion and Exposition genres show that in many instances the Micro-genres functioned implicitly as part of the Argument stage of a Discussion or Exposition genre. In some cases, the Micro-genre was followed by the explicit sub-stages of Point, Elaboration for the Macro-genre Argument, subsuming the Micro-genre within the Macro-genre's structure. For example:

par.	Nature vs. nurture Excerpt from Student 6's 1999 Exposition (Distinction)	Micro-genres & sub-stages	Macro schematic stages
6	Vygotsky's sociocultural-theory focuses on how culture (values, beliefs, customs and skills of a social group) affects the next generation" (Berk 1997 p. 27). Social interaction and dialogue with more knowledgeable members of society help children develop the ways of thinking and behaving that make up the community's culture (Berk 1997 p. 27). Vygotsky believed social interaction and adult regulation are essential to the child's cognitive development. He also believed that humans are born with simple abilities – to see, hear, touch, and remember and to demand interaction. What they see, hear, touch and remember, and the interaction they obtain depends on their environment. Nature and nurture are both important (Lecture Notes Week 4 1999). Development is dependent upon the individuals innate abilities and his/her environment. To teach children it is important to provide the child with social interaction with their peers and significant adults. It is also important to understand the child's social environment, certain aspects of their culture can greatly influence the way they develop and learn.	DESCRIPTIVE REPORT: Theory **Classification** **Description of Theory** **Belief Statement** **Belief Statement** Point Implications	Implicit Argument for nurture **ARGUMENT**

In the above example, the Micro-genre was integrated into the Argument structure through the student's organisation of the text as a paragraph. This form of integration was particularly evident in Micro-genres such as Exemplums and Empirical Accounts which included an evaluative dimension. In other instances, the Micro-genres were orthographically distinct from the Argument component of the text as the Micro-genres were segmented into paragraphs. Examples of this are the Descriptive Reports in Student 13's 2001 Discussion. This was also a feature of a number of Descriptive Reports and Taxonomic Reports in the Summary stage of the Evaluative Accounts. Table 6.7.2 shows the occurrence of Micro-genres in the students' texts which were orthographically distinct, that is, organised into paragraphs.

Table 6.7.2 Distribution of Micro-genres organised as paragraphs

	1999 Fail to Credit Grade Range Students					D & HD Grade Range Students			
	s 11	s 12	s 14	s.8	s. 3	s 9	s 2	s 6	s 4
Empirical Account		1	3			2	2		2
Historical Account									
Exemplum									
Taxonomic Report	3	1			1	1			
Descriptive Report	1	1		7	1	2		1	
Explanation									
Evaluative Acc.									

	2000 Fail to Credit Grade Range Students			D& HD
	s 8	s 11	s 16	s 4
Empirical Account				
Historical Account		2		
Exemplum				
Taxonomic Report				1
Descriptive Report	2			1
Explanation				
Evaluative Acc.			2	

	2001 (April) Pass to Credit Grade Range Students				D& HD Grade		
	s 12	s 16	s 13	s 14	s 9	s 6	s 15
Empirical Account						1	
Historical Account							
Exemplum							
Taxonomic Report		2			1		
Descriptive Report	1		3	1	1		1
Explanation					1		
Evaluative Acc.							

	2001 (June) Pass to Credit Grade Range					D & HD Grade Range	
	s 5	s 8	s 13	s 11	s 16	s 2	s 15
Empirical Account							
Historical Account							
Exemplum	6	3			2	1	1
Taxonomic Report		2	2		1		
Descriptive Report			3		2		1
Explanation			1	1			
Evaluative Acc.							

No doubt the extent to which the Micro-genres were integrated into the Macro-genre structure had an impact on the success of the text. However, such an assessment requires more detailed linguistic analysis, taking into account cohesive features such as reference, conjunction and lexical cohesion. The presence of Micro-genres as separate orthographic units and only implicitly integrated in the texts as shown in Table 6.7.2 suggest that Micro-genres play an important role in the students' learning through writing.

Closer examination of the Micro-genres within the Macro-genre structure shows that some of the Micro-genres often preceded a new Argument in an Exposition or Discussion genre, or in the case of Evaluative Accounts, interrupted the various Summary stages. From the perspective of the students' learning, it appears that these Micro-genres function as a textual 'learning bridge' in the texts. In other words, the Micro-genre interrupts the Argument or Summary stages so that the 'student can clarify, remind or explain a phenomenon or concept either to him/herself or demonstrate to the marker that the student has understood the concept. The Micro-genres appearing in this way in the students' texts are therefore seen to have an important function for learning and understanding new concepts. Such Micro-genres are labelled in this study as 'textual learning bridges' as they provide the students with a textual means of reviewing their learning of a concept before presenting another Argument or Summary stage of the Macro-genre.

In the following example, the Taxonomic Report in paragraphs 22 and 23 was sandwiched between one viewpoint on learning in paragraph 21 (conclusion to Vygotsky's theories), and another area of learning developed in paragraph 24 (information processing). As a Taxonomic Report, the Micro-genre functioned to describe the theory of information processing and its components, yet in the Macro-genre environment of the Discussion, it had a distinct learning function. That is, before the student presented the viewpoint of paragraph 24 (*that the theory of information processing has relevance for the classroom*), she assisted her learning of

theoretical concepts by reviewing her understanding of information processing through the Taxonomic Report.

Par.	Theories of children's thinking and learning – implications for teaching Excerpt from Student 13's June 2001 Discussion (Credit)	Micro-genres & sub stages	Macro-genre
21	Children have a natural competence to learn, all that is needed at the beginning is the presence of learning around them. Learning will without a doubt continue to grow; however it will increase under the optimal conditions of adult-child interaction. This is where the role of teacher becomes significant. As the ultimate goal for education is to promote effective thinking, by maximising the learning acquisition process through discussion, teachers may intensify children's general intellectual development. Providing a learning environment and psychological safety within which productive learning can prosper. This would positively be an effective role for the teacher and is consistent to Vygotsky's theory of language and cognitive development rather than that of Piaget.	Point Elaboration Implications	ARGUMENT (viewpoint)
22	Information processing is the process involved in thinking, examining how people encode, organize, interpret, store or respond to stimuli. The learning process consists of three broad stages; selectively attending to relevant stimuli received through our senses – Encoding; processing the information presented by the selected stimuli – Temporary Storage; and storing it so that it may be used at a later date – Permanent Storage (Berk, 1997). The method in which we accumulate information in essence affects our recovery of it, our prior knowledge of a circumstance or subject manipulates the way we process the information being given to us.	TAXANOMIC REPORT: Description of Parts	
23	Information processing involves both cognition – the broad range of mental processes involved in thinking and metacognition – the understanding that cognitive strategies are available to us. According to Wood (1996) children are "limited processors of information",. they have not yet gained the expertise that adults have acquired through experience this limits their ability to pay attention, organize their own learning and solve problems. Much of the research in Information Processing determines that when young children are given the proper instruction and support they are capable of performing tasks efficiently however if they were left to their own devices they may have found these tasks impossible.		
24	I feel that Information Processing model is extremely important to teaching if implemented in the correct way. Relating the context of a topic to what a child is already familiar with gives the child a greater chance of processing the information into their long term memory, as stated in Miller (1999), "In order to store unrelated information, the person must do something special to the material." Capturing the children's attention is a key aspect to teaching and if the children enjoy and are able to relate the meaning of the content then they are more likely to transfer the subject matter in their short-term memory to their long-term memory.	Point Elaboration	IMPLICATIONS

While it could be argued of this example that the Micro-genre functioned only as a clumsy transition between one point in the text and the next, there was evidence in the longer text that the student had control of cohesive transition signals. For example, cohesive links were made through reference, conjunction, and lexical cohesion. Reference was established in the Hyper-Themes of paragraphs 19 and 20, *The most important application of Vygotsky's theory to education* (19), and *A second*

important aspect of Vygotsky's theory (20). Conjunction in the Hyper-theme of paragraph 17, *Furthermore* established a logical relation with the previous paragraph, and lexical cohesion in the Hyper-Themes of paragraphs 6, 7 and 8 made links to aspects raised in the Preview stage of the Discussion.

As textual learning bridges, descriptive genres such as the Taxonomic Report and Descriptive Report were a means through which the students reviewed and built up knowledge of the field within an Expository structure. Other illustrative genres, such as Exemplums and Empirical Accounts, were a means through which the students made links between theory and practice. Micro-genres also have another learning function; that is, they are a means through which the tutor can monitor the students' understanding.

The role of Micro-genres for students' learning appears to be one that has received little attention in the literature on teaching academic writing. The implications of these findings are discussed at the close of this chapter.

Before addressing the findings for the register variables of field, tenor and mode, the discussion will revisit one area of generic structure which caused considerable problems in the students' writing: the Evaluation stage in the Evaluative Account genre.

6.7.3 Problems Realising Schematic Structure

As the results for the Evaluative Accounts show, students experience problems with staging when writing in unfamiliar genres. A major problem for the student writers in this study was realising the 'review and analyse' stage of the Evaluative Account genre. Seven of the fourteen students' Evaluative Accounts realised the Analysis stage of the genre as a critique of the journal article. These students commented on the research process, the cohesiveness and logic of the text, the accessibility of the text to the reader and so on. Some aspects of this critique may have been regarded as

valid by the tutors. However, as a schematic stage in the genre it was not regarded as a successful review and analysis of the concepts discussed in the journal article.

In order to provide some insights into why half the students interpreted the task of analysis in this way, Appraisal theory (for example, Martin 2000; White 2001) will be used as the tool of analysis. Appraisal theory has been developed within systemic functional linguistics in order to understand better the ways in which speakers or writers use language to construct an evaluative stance. The most relevant aspect of Appraisal theory for these students' texts is the sub-system of APPRECIATION. This sub-system is to do with how phenomena and processes are valued. In Martin's approach to Appraisal (2000), the variables of APPRECIATION are reaction, composition and valuation. Reaction is to do with the impact of the text or process (for example, *persuasive*), while composition refers to the qualities of the text/process's structure and complexity (for example, *clear, argued logically*). The variable of valuation is the text's or process's social value or significance within its social or institutional context (for example, *valid, reliable*). The sub-system of APPRECIATION has both positive and negative appraisals.

The Appreciation items have been highlighted in the following Analysis of the Article stage in Student 12's Evaluative Account. Note that Appraisal items may consist of a single lexical item, group, or clause.

The student's choices in the APPRECIATION system are detailed in Table 6.8, after Martin (2000).

Excerpt from Student 12's 2001 Evaluative Account.

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6 **Critical response to article**
The journal article, Working memory capacity and strategy use is extremely recent, keeping in mind that information processing and memory themes are in the foremost it offers its audience possibly teachers, parents guidelines into the importance of their role to encourage students to use strategies to increase working memory.

7 Working memory capacity and strategy use is structured in a way that provides the article with strength and value. Findings, hypotheses, conclusions are discussed through the article by referring to other researchers *recent* findings which are also linked to older relevant findings which supports the article's argument. Findings that are not used also correspond with McNamarra and Scott. (Berk, 1997; Biehler, Snowman, 1990; Travers et al., 1993; Eysenck, Keane, 1997).

8 All major issues raised by the article are extensively referenced building reliability to the article.

9 New findings of the study that challenge previous ideas in the field of working memory, are firstly defined, argued logically through examples and explores reasons why the 'old, previous' ideas are not acknowledged by the researchers. The ways in which findings of the research are presented produces an article that is clear, persuasive, valid and reliable.

Table 6.8 Appreciation choices in Student 12's Evaluation Stage

	Positive	Negative
Reaction: impact	extremely recent,	
Reaction: quality	persuasive	
Composition: balance	Strength, argued logically,	
Composition: complexity	Clear, extensively referenced, (refers to) recent findings linked to relevant findings, (findings) correspond with..., defined	old, previous ideas (*intertextual reference*)
Valuation (social value)	value, valid, reliable, reliability, new findings that challenge...,	

In the interview excerpt in the sub-section 6.7.2 of this chapter, Tutor Four commented that "*sometimes [students] are being asked to do things beyond the scope of their experience*". This comment makes it clear that tutors do not expect responses similar to reviewers' comments on an academic article. It would seem however, that Student 12 tried to respond to the assignment task by drawing on her

experience of learning in the university. For example, Table 6.8 contains several Appreciations which would not be out of place in the marker evaluation of a student assignment. Phrases such as *clear, argued logically,* and *extensively referenced* are no doubt familiar to the student if not from comments on her own work, then from marking criteria in departmental writing guidelines. The student has appraised the research article in terms of its construction and complexity, adopting criteria she has experienced as valued in her field of learning. She has also had to read a research article and respond to this as part of her lecturers' attempt to encourage students to read primary research. This focus on primary research has resulted in the student's positive appreciation in the choices of *recent findings* and amplification in *extremely recent*, as opposed to the negative appreciation of *old, previous ideas*. Furthermore, choices such as *valid* and *reliable* are evidence that the student has adopted the institutional and social values of her field as she has experienced them in her studies.

The above analysis of Appreciation choices is an attempt to explain the less successful students' Analysis of the Article stages in their Evaluative Accounts. No doubt many of these choices would contribute to an Analysis stage, but it is clear from the markers' comments and from the grade awarded that such Analyses are no substitute for another kind of Analysis. An ongoing aim of this thesis is to provide an accessible linguistic description of what is valued as analysis in students' writing. Therefore the Analysis of the Article stages of the three most successful Evaluative Accounts are presented by way of comparison. These are the texts of Student 6 (HD), Student 10 (D+), and Student 15 (HD). These texts are likewise briefly analysed from the perspective of Appraisal theory, as well as other relevant linguistic systems.

a) Excerpt from Student 6's Evaluative Account (HD)

Par.	Review of Kathryn J. Campbell and Joanna P. Williams article Reader's Social Desirability and Text That Violates Social Values: Evidence of an Interaction	Micro-genres & sub-stages	Macro schematic stages
6	Learning to conform to society norms is an essential part of socio-emotional development (Berk, 1997, p. 469). "While it appears that humans are born with a basic set of emotions, more complex emotions develop as children's cognitive, social and linguistic skills increase" (Barnes, cited in Lysaght, p. 129). Around 2 years of age children develop a sense of self-awareness. As children become aware of themselves they feel the need to fit into their social environment. They begin to learn to express their emotions in ways that are socially acceptable. They learn the rules of their culture and develop a sense of morality and some learn to empathise with others (Lysaght, p. 135).	Point Elaboration / EXPLANATION	ANALYSIS OF ARTICLE (link to related theory)
7	Piaget studied children's moral development. One of Piaget's best known tests was asking children which child was naughtier the child who accidentally broke fifteen cups or the child who broke one cup while he was stealing jam. From the children's responses Piaget identified two stages of moral understanding: heteronomous and autonomous morality (Berk, p. 469). Heteronomous means under the authority of others. Initially children conform to the rules governed by authority figures such as parents and teachers. Piaget suggests that as egocentrism disappears and children are presented with conflicting ideas they reorganise their cognition and recognise that the rules are flexible. They make the transition to autonomous morality and acknowledge that sometimes it is necessary to break or change a rule (Berk, p. 469). Kohlberg extended Piaget's studies and he found that when given a choice between breaking or keeping the rules or preserving individual rights most advanced moral thinkers support individual rights (Berk, p. 472).	EMPIRICAL ACCOUNT Recount of Experimental Procedure Point Elaboration Point	ANALYSIS OF ARTICLE (link to related theory)
8	In view of Piaget's and Kolberg's research it is not surprising that Campbell and Williams subjects chose their own social values over characters who violate social norms. The students were in a school setting where they felt a great need to appear socially acceptable. They chose their individual right to appear socially acceptable over the ideas of breaking moral rules.	Point Elaboration	ANALYSIS OF ARTICLE (comment on findings)

b) Excerpt from Student 10's Evaluative Account (D+)

Par.	Guthrie, J.T., Wigfield, A., & VonSecker, C. (2000). Effects of Integrated Instruction on Motivation and Strategy Use in Reading. *Journal of Educational Psychology*, 92, (2), 331-341.	Micro-genres & sub-stages	Macro schematic stages
4	From the article it can be seen that the traditional classroom is not as effective a learning place as the CORI classroom. Berk (1997), also examined traditional classrooms and states that "the high teacher structure and lack of pupil autonomy in traditional classrooms seems to contribute to a general decline in motivation throughout the school" (Berk, 1997, p. 610). Therefore he would support Guthrie et al's conclusion about the need to use other teaching strategies which enhance students motivation in the school.	Point Elaboration	ANALYSIS OF ARTICLE (link to related research)
5	The articles' focus and conclusions can be also seen in a study by Reglin (1993), where he experimented with low achieving students. His conclusion complements Guthrie et als. Reglin states that "the quality of task engagement and the quality of achievement are the highest when students perceive themselves to be engaged in order to please an authority figure, obtain reward, or escape punishment" (Reglin, 1993, p. 78). This intrinsic motivation therefore is essential for students to learn at their full potential.	Point Elaboration	ANALYSIS OF ARTICLE (link to related research)

6	Coopersmith (1975) has also concluded various studies on children's motivation. His results show similar findings to the Guthrie et al article. He concludes that students learn more and advance at a great rate when they have the choicee of activities and can determine the rate in which they can work at. However he did also comment that this type of learning did not suit all students that were involved in the study. He states that "children are curious and want to explore what schools have to offer provided that the schools give them some freedom to explore it in their own way" (Coopersmith, 1975, p. 140). This implies that what Guthrie et al commented on, about schools and teachers needing to ensure activities motivate students and increase their motivation to learn is valid and important.	Reported Point Reported Elaboration Point	ANALYSIS OF ARTICLE (link to related research)
7	The article is examining motivation as an aspect in the social learning theory. "The social learning theory describes how modeling, instruction from others and vicarious learning about reinforcement and punishment impart information to the child" (Miller, p. 233). Motivation influences children's learning and behaviours. According to Kelly, there are various beliefs about motivational theories. The traditional theories of motivation which include Skinner, Freud and Miller, "claims that humans need to drive, a need, a goal or a stimulus to set them in motion" (Kelly, 1994, p. 244). This is exactly what the article has shown. However according to Piaget "motivation for activities in intrinsic to the organism" (Miller, 1993, p. 73). He would not agree with the results of the article, about how different instruction can change children's motivation.	Point Elaboration Counter Point	ANALYSIS OF ARTICLE (link to related theory)
8	Albert Bandura similarly studied how motivation and reinforcement influences students behaviours. His studies where different to Guthries et al, as he focused mainly on student behaviours, and not at different teaching strategies (Miller, 1993). However his findings about how reinforcement and encouragement impacts students behaviours and motivation to learn is relevant and complements the information found in Guthrie et al article. Both comment on the type of reinforcement being a determent of a students motivation to learn.	Point Elaboration	ANALYSIS OF ARTICLE (link to related theory)
9	Other theories which support Guthrie et als ideas are Lysaght and Maslow. According to Lysaght students will learn better and be motivated to be actively involved in their won learning if children can set realistic goals that help them recognize and achieve their potential. She also states that when "teachers help children develop a positive self-concept and a real sense of self-worth" (Lysaght, 1999, p. 147) they are motivated to learn. Maslow also recognized the importance of motivation in relation to self-concept and self-worth. He believes we should "use our abilities to fulfil our potential" (Lysaght, 1999, p. 148). Both of these conclusions are seen in the article as children's motivation increased in the CORI classroom due to teachers providing self-directed learning, and competence support.	Point Reported Elaboration	ANALYSIS OF ARTICLE (link to related theory)

c) Excerpt from Student 15's Evaluative Account (HD)

Par.	A developmentally appropriate test of kinder/school readiness – S. Clift, K. Stagnitti, L. DeMello	Micro-genres & sub-stages	Macro schematic stages
4	Another developmental theorist, Lev Vygotsky, includes the concept of pretend play in cognitive development, citing pretend play as a tool in development. He believed that pretend play, or make-believe play, created a Zone of Proximal Development within the child, enabling them to operate at a higher cognitive level than they might otherwise be able to (Berk, 1997). This also fits in with the ToPP referred to in this article as, traditionally, children were tested for their level of cognitive functioning (Clift et al, 2000) of which pretend play assists.	Point R. Elaboration Point	ANALYSIS OF ARTICLE Link to other theories
5	Pretend play and its effect on cognitive functioning is also a connection made in Jerome Singer's theory. In his studies, Singer found that children who rated highly on tests of pretend, or fantasy, play tended to play more, were able to concentrate on tasks for longer and showed more self-control submitting to rules or while waiting (Singer, 1973 in Garvey, 1991). This again shows that cognitive functioning is assisted by pretend play and in reference to the article, shows a readiness to attend school.	Point Elaboration Implication	ANALYSIS OF ARTICLE Link to other theories

6	Besides providing theoretical background of the tests used in this article, the wider readings of this topic also show support for the reasoning and criticism of the structure of the study. The main support from the text for the study is for its use of play as a tool for assessment. In a study in Berk (1997), the students judged more socially competent by their teachers were those who spent more time in socio-dramatic (pretend) play (Burns & Brainerd, 1979, Connolly & Doyle, 1984). The teachers in this study had made a direct link between assessing play and the cognitive benefits of play.	Point Elaboration	**ANALYSIS OF ARTICLE** (link to related theory)
7	Garvey (1991) found that increases in verbal skills and language use were evident after training in socio-dramatic (pretend) play, hence defining a cause-effect relationship between play and cognition. Also in line with Garvey, Miller (1993) concludes that the development of representational thought (as in pretend play) makes it possible to use language. Both these texts draw a clear distinction between language development and play.	Point Elaboration	**ANALYSIS OF ARTICLE** (link to related theory)

A significant difference between these higher scoring excerpts and Student 12's Analysis of the Article stage is that while evaluation is present, there is considerably less evaluation of phenomena than in Student 12's text. As with Student 12, these students comment on the article as a phenomenon (examples i-ii), yet they also include evaluations of phenomena to do with learning and child development (examples iii-v).

i) Student 15: paragraph 6

Comment on the structure and complexity of the study: *for the reasoning and criticism* [APPRECIATION: composition] *of the structure of the study,*

ii) Student 10: paragraph 6

Comment on the text's social value or significance: *what Guthrie et al. Commented on...was valid and important* [APPRECIATION: valuation]

iii) Student 10: paragraph 4

From the article it can be seen that the traditional classroom is not as effective [APPRECIATION: impact] *a learning place as the CORI classroom*

iv) Student 10: paragraph 5

This intrinsic motivation therefore is essential [APPRECIATION: valuation] *for students to learn at their full potential.*

v) Student 6: paragraph 6

Learning to conform to society norms is <u>*an essential part of socio-emotional*</u> <u>*development*</u> [APPRECIATION: valuation]

In addition to APPRECIATION, Appraisal theory includes the sub-systems of AFFECT, which is to do with positive or negative emotional responses. Only one appraisal of emotion appears in these text excerpts.

Student 6: paragraph 8 [AFFECT]

In view of Piaget's and Kohlberg's research it is not surprising that Campbell and Williams subjects chose their own social values...

To sum up the findings drawn from an Appraisal analysis of these excerpts a distinctive difference between the successful texts and the marginally successful text was the extent to which evaluation was used as a resource and what was evaluated. In the higher scoring texts, evaluation of the article as a text was less prominent and the students tended to focus on issues to do with learning and child development rather than just on the article as a phenomenon, as was the case with the lower scoring texts.

However, to identify the most significant differences between the higher scoring analysis stage excerpts and the lower scoring ones, it is necessary to refer to the field dimension of this schematic stage, in other words the things and events in the text. While the lower scoring excerpt focusses on the article, the higher scoring texts make comparative links to theories and empirical research relevant to the article under review. The students draw on a range of linguistic resources to make connections such as relational clause grammar, the cohesive resource of reference, and logical relations realised as processes and circumstances. Some links are realised as explicit ones while others are implicit. In the following two excerpts from Student 15's and Student 10's texts, the comparative links between issues in the text and related empirical research or theories have been highlighted.

Excerpt from Student 15's Evaluative Account (High Distinction)

4	Another developmental theorist, Lev Vygotsky, includes the concept of pretend play in cognitive development, citing pretend play as a tool in development. He believed that pretend play, or make-believe play, created a Zone of Proximal Development within the child, enabling them to operate at a higher cognitive level than they might otherwise be able to (Berk, 1997). This also fits in with the ToPP referred to in this article as, traditionally, children were tested for their level of cognitive functioning (Clift et al, 2000) of which pretend play assists.
5	Pretend play and its effect on cognitive functioning is also a connection made in Jerome Singer's theory. In his studies, Singer found that children who rated highly on tests of pretend, or fantasy, play tended to play more, were able to concentrate on tasks for longer and showed more self-control submitting to rules or while waiting (Singer, 1973 in Garvey, 1991). This again shows that cognitive functioning is assisted by pretend play and in reference to the article, shows a readiness to attend school.
6	Besides providing theoretical background of the tests used in this article, the wider readings of this topic also show support for the reasoning and criticism of the structure of the study. The main support from the text for the study is for its use of play as a tool for assessment. In a study in Berk (1997), the students judged more socially competent by their teachers were those who spent more time in socio-dramatic (pretend) play (Burns & Brainerd, 1979, Connolly & Doyle, 1984). The teachers in this study had made a direct link between assessing play and the cognitive benefits of play.
7	Garvey (1991) found that increases in verbal skills and language use were evident after training in socio-dramatic (pretend) play, hence defining a cause-effect relationship between play and cognition. Also in line with Garvey, Miller (1993) concludes that the development of representational thought (as in pretend play) makes it possible to use language. Both these texts draw a clear distinction between language development and play.

Excerpt from Student 10's Evaluative Account (Distinction+)

4	From the article it can be seen that the traditional classroom is not as effective a learning place as the CORI classroom. Berk (1997), also examined traditional classrooms and states that "the high teacher structure and lack of pupil autonomy in traditional classrooms seems to contribute to a general decline in motivation throughout the school" (Berk, 1997, p. 610). Therefore he would support Guthrie et al's conclusion about the need to use other teaching strategies which enhance students motivation in the school.
5	The articles' focus and conclusions can be also seen in a study by Reglin (1993), where he experimented with low achieving students. His conclusion complements Guthrie et als. Reglin states that "the quality of task engagement and the quality of achievement are the highest when students perceive themselves to be engaged in order to please an authority figure, obtain reward, or escape punishment" (Reglin, 1993, p. 78). This intrinsic motivation therefore is essential for students to learn at their full potential.
6	Coopersmith (1975) has also concluded various studies on children's motivation. His results show similar findings to the Guthrie et al article. He concludes that students learn more and advance at a great rate when they have the chose of activities and can determine the rate in which they can work at. However he did also comment that this type of learning did not suit all students that where involved in the study. He states that "children are curious and want to explore what schools have to offer provided that the schools give them some freedom to explore it in their own way" (Coopersmith, 1975, p. 140). This implies that what Guthrie et al commented on, about schools and teachers needing to ensure activities motivate students and increase their motivation to learn is valid and important.
7	The article is examining motivation as an aspect in the social learning theory. "The social learning theory describes how modeling, instruction from others and vicarious learning about reinforcement and punishment impart information to the child" (Miller, p. 233). Motivation influences children's learning and behaviours. According to Kelly, there are various beliefs about motivational theories. The traditional theories of motivation which include Skinner, Freud and Miller, "claims that humans need to drive, a need, a goal or a stimulus to set them in motion" (Kelly, 1994, p. 244). This is exactly what the article has shown. However according to Piaget "motivation for activities in intrinsic to the organism" (Miller, 1993, p. 73). He would not agree with the results of the article, about how different instruction can change children's motivation.
8	Albert Bandura similarly studied how motivation and reinforcement influences students behaviours. His studies were different to Guthries et al, as he focused mainly on student behaviours, and not at different teaching strategies (Miller, 1993). However his findings about how reinforcement and encouragement impacts students behaviours and motivation to learn is relevant and complements the information found in Guthrie et al article. Both comment on the type of reinforcement being a determent of a students motivation to learn.
9	Other theories which support Guthrie et als ideas are Lysaght and Maslow. According to Lysaght students will learn better and be motivated to be actively involved in their won learning if children can set realistic goals that help them recognize and achieve their potential. She also states that when "teachers help children develop a positive self-concept and a real sense of self-worth" (Lysaght, 1999, p. 147) they are motivated to learn. Maslow also recognized the importance of motivation in relation to self-concept and self-worth. He believes we should "use our abilities to fulfil our potential" (Lysaght, 1999, p. 148). Both of these conclusions are seen in the article as children's motivation increased in the CORI classroom due to teachers providing self-directed learning, and competence support.

In these excerpts, the process of comparing related empirical research and theories results in a high number of specific human participants as actors and as circumstantial elements in the clause (e.g. *Lev Vygotsky includes; Miller concludes; according to Piaget; Albert Bandura studied*). Therefore in these students' texts, disciplinary knowledge is construed as constructed and dynamic. It is constructed by researchers and theorists, while its dynamic and evolving dimension is evident in the acknowledgment that researchers extend theories as well as contest them, for example *Kohlberg extended Piaget's studies; [Piaget] would not agree with the results of this article.*

Other field related processes occuring in these excerpts are those of taxonomising and reasoning. Taxonomising is the process of systematically relating phenomena to each other. Taxonomising plays an important role in the students' learning through writing as it allows the students to build up their own semiotic map of disciplinary theories and phenomena. Taxonomising occurs in Student 6's paragraph 5 (Example vi), and Student 10's paragraph 7 (Example vii). In both examples, the phenomena (underlined) are classified in part-whole taxonomies. The taxonomic relations are in bold.

> vi) Student 6: paragraph 5
> *Learning to conform to society norms is an essential part of socio-emotional development.*

> vii) Student 10: paragraph 7
> *The article is examining motivation as an aspect of social learning theory.*

The final process to be considered is reasoning. Explanations of why, how, under what conditions, what implications etc. are intrinsic aspects of analysing and explaining phenomena from a disciplinary perspective. Some examples of deductive reasoning from these excerpts are given below. In example viii) reasoning is construed through conjunctions, and in the example ix) as a verbal process.

viii) Student 10: paragraph 4 & 5

***Therefore** he would support Guthrie et al.'s conclusion.*

*This intrinsic motivation **therefore** is essential for students to learn*

ix) Student 15: paragraph 5

*This again **shows** that cognitive functioning is assisted by pretend play*

Thus, this brief comparative analysis of excerpts from three successful texts and one marginally successful text provides some insights into the nature of 'analysis' in the genre of Evaluative Accounts. In the Analysis of the Article stage, the results show that making links to theories and research relevant to the article is an important experiential component of analysis. Analysis can also be seen to have an evaluative dimension, as evaluation of phenomena to do with learning and child development also features in these texts. From the perspective of learning through writing, making links with theories and research extends the students' knowledge base of the discipline. While this aspect of learning through writing is grounded in the experiential domain, making evaluations has to do with the interpersonal dimension of learning. That is, taking an evaluative stance is one aspect of the student engaging with disciplinary knowledge as a participant rather than as a consumer of knowledge.

This discussion of problems in realising schematic stages concludes the sections on Macro and Micro-genres. The final component of the results' section of this chapter is concerned with the register variables of field, tenor and mode. As with the sections on Macro and Micro-genres, the discussion of field, tenor and mode draws on the corpus rather than focussing in detail on a few students' texts. The intention of such an approach is to build up a general picture of the range of language choices students make in their writing. It is also to provide a greater understanding of how students learn specialist knowledge through their writing.

6.7.4 Field

Genres are "staged, goal-oriented social processes" (for example, Martin 1998: 412), which are realised through the register variables of field, tenor and mode. According to Veel and Coffin (1996), these contextual variables can provide insights into how the students construe and interpret their educational context. The first variable to be discussed is field, the things and events in the text. The guiding question to the analysis was to what extent did the students relate the field to their own experience of education? In other words, to what extent was the field construed as commonsense knowledge, or as a more abstract entity?

As field is one of the contextual variables through which genres are realised, the way in which the field was construed in the texts depended on the choice of genre. In the students' expository genres the field of discourse was primarily abstract. Phenomena were abstract theoretical entities rather than tangible concrete things. The abstractions in the following example are in bold:

> The **satisfaction** of **curiosity**, or **achievement** of a sense of **accomplishment** should be the primary method of intrinsic **motivation**. [Student 3, June 2001, paragraph 2]

The main linguistic resource to create these entities is grammatical metaphor. That is, the grammar reconstrues, or reconstructs semiotically (Halliday 1998) experience which in the everyday world would be construed as actions, to a specialist disciplinary world in which experience is construed as abstract entities. In the above example, the actions *motivate, satisfy, achieve* and *accomplish* were reconstrued as entities, thus removing these actions from an 'everyday' experience of the world. While there were a number of apparently 'everyday' elements in the texts which would be familiar to the students from their experience of the world, these factors tended to be construed as abstract entities. For example, places referred to in the texts such as *the classroom, the home, the environment* were construed as generic abstract entities rather than specific ones located in the writers' experience. Similarly, the

generic human participants in the texts were referred to by their institutional status, such as *teachers, students,* and *researchers,* while the specific human participants were predominantly theorists and researchers in the field.

Therefore the field was predominantly construed in the students' texts as abstract rather than everyday. Drawing on Bernstein's distinction between commonsense and 'uncommonsense' knowledge (1975), knowledge in the students' texts was not construed as 'commonsense', grounded in the everyday and tangible, but 'uncommonsense' and abstract. An important exception to this finding, however, has to do with the students moving in their writing from commonsense views of the world to the uncommonsense and abstract dimension of disciplinary knowledge. This occurs explicitly in the following extract from an Issue stage of a first session, first year assignment:

[Student 8's 1999 Discussion]

2	By nature it does not mean to go out and enjoy the sunshine and the wildlife, but is the inborn biological givens; which are our skills and characteristics passed down from our parents at the moment of conception. Another way of putting this is to say that it is inherited.
3	An example is when a father goes bald early in life, there is a chance for the son to also go bald early in life because it is hereditary.
4	By nurture we do not mean the caring and babysitting of children, but the complex forces of the physical and social environment that children encounter in their homes, neighbourhoods, schools and communities.

In this excerpt the student distinguishes between commonsense understandings of nature and nurture, *to go out and enjoy the sunshine and the wildlife; the caring and babysitting of children,* and the disciplinary understanding of nature and nurture, *the inborn biological givens; the complex forces of the physical and social environment.* This move from commonsense understandings to uncommonsense knowledge was also identified in the students' textbook (Chapter Five). In the pedagogic text as well as in the student's text, language is used to shunt students from commonsense views of the world to the uncommonsense world of disciplinary knowledge.

Other instances when the field was construed as everyday experience were in the Exemplum genre. Exemplums occurred in the students' Expositions and Discussions to reinforce the point made. In the Orientation and Interpretation stages the field was

typically construed as abstract, while in the Incident stage, the field was a concrete one, in which the student related his or her own teaching experiences to link theory with practice. For example:

SCHEMATIC STAGES & LANGUAGE FEATURES	Excerpt from Student 5, June 01, Grade P
Orientation	As all children remember things differently, all children are motivated differently also. A teacher has a large effect on students in regards to their motivation (Jaasma & Randall, 1999). The reactions that a teacher has to a child may affect their self-esteem,
Incident *Temporal circumstances, past progressive and past tense, specific participants, built up around a sequence of events*	and in turn their motivation. On my 2nd year practicum, I was trying to help a young girl with her worksheet. She got to a part where you had to fill in the missing words from the sentence. She refused to do it after several attempts to help her, and then she said, "I can't do it, Mrs J. said it's very hard and I might have trouble and I couldn't do it last week. I'm not doing it". This child had been told that last week she didn't do the exercise very well
Interpretation	and so she believed that she was not going to be able to do it well this time. She had no motivation to do it because it she was told that she was going to have trouble with it.

The Point sub-stage of this Exemplum in the Macro expository structure is that teachers impact on students in regards to their motivation. The Incident stage of the Exemplum provides concrete evidence for this point. The school student's lack of motivation is construed through a recount of events, while the Interpretation provides an explanation for her behaviour. It seems that shunting between commonsense construals of experience and knowledge, and uncommonsense ones not only plays a role in linking theory and practice, but can assist the students' learning and understanding of uncommonsense theoretical concepts.

A final observation about shunting between commonsense meanings and uncommonsense meanings has to do with students' grades. The strategy of shunting appears to occur more often in the lower scoring texts. As there are a range of problems contributing to the grade of the lower scoring texts, it is not clear whether moving between concrete and abstract construals of field plays a significant role. Suffice to say, however, that this area is worth further investigation.

6.7.5 Tenor

Tenor as a contextual variable is the way social relations are construed in the text between the student and reader, and the way the student engages with child development issues. In other words, the specific question regarding tenor is the following. To what extent do the students construe themselves as novices in their own texts, or as insiders participating in the knowledge making practices of the discourse community?

In general the tenor is construed in the students' texts as formal with infrequent contact between writer and reader. The lexis in most cases is formal; however, as can be expected from novice writers in an unfamiliar context, there are a number of infelicities in regards to tenor. In some instances the presence of informal lexis detracts from the text as a mature and learned academic text. For example:

> As Bruner puts it, [Student 13, 1999]
>
> An example of the top of my head [Student 8, 1999]
>
> Creativity is basically having the ability to produce new and original ideas and things.[Student 16, 2001]

In most cases the tenor is construed as impersonal with little direct reference to the writer. However, in the Position stage and the Implications stage of the Expositions, Discussions and Evaluative Accounts many of the students include belief statements construed as mental processes with the writer as Sensor, or as rank-shifted mental processes:

> These are that I value the child as an individual in their development and learning, that I believe that neither intelligence nor creativity are limited to the domains of mathematics and language, that I believe learning to be social and cooperative, that I believe that learning to learn is an important skill and that learning must be meaningful to be effective. [Student 15, 2001]

Such belief statements are indicative of the pedagogic relation of teacher and learner in these texts. That is, the students need to make clear to their tutors how theory will shape their own teaching practices. There is another tenor dimension to the students' belief statements. In schematic stages such as Implications for the Classroom, the students evaluate theories and assess their relevance for the classroom. Such processes are not unlike the discursive practices of expert disciplinary writers. However, this is not sufficient evidence to suggest that the students construe themselves in their texts as insiders participating in the knowledge making practices of the discipline. At most, it seems that the social relations of the students vis a vis the discipline is one of consumers of research replicating some of the knowledge making practices of the discipline.

The students do, however, explicitly identify themselves in their texts as future teachers. Grammatically, this construal tends to occur via the Circumstance of Role.

> It is essential for me *as a future teacher* ... [Student 9, 2000, D]
>
> It is by examining these theories that I will be able to make judgment on how these theories can help my future ability *as a teacher* [Student 16, 2001, C]
>
> *As a future educator* [Student 14, 2001, D-]
>
> It is difficult *for pre-service teachers* to comprehend how children think and learn due to their limited time within the education and university systems [Student 2, 2001, D].
>
> In conclusion, I would like to note that I have had very little teaching experience [Student 9, 2001, HD]

Furthermore, there are some instances as in the last examples in which the students make reference to their novice status. The evidence in the texts therefore suggests that the students construed themselves as novice practitioners rather than disciplinary 'insiders'.

6.7.6 Mode

Mode refers to the role language is playing and the channel of communication. The specific question in regards to mode of discourse is to what extent do the students' texts display grammar patterns of more spoken texts? How are the texts organised?

In the majority of the students' texts, the mode is very written. That is, the texts tend to be lexically dense rather than grammatically intricate (Halliday 1985). Nominal groups are frequently long and complex with Pre and Post Modifiers. For example:

> the child's Zone of Proximal *Development*
>
> the *ability* to adapt successfully to new situations and the environment in general
>
> the *interaction* of the child with adults and more capable peers
>
> *collaboration* with more capable peers [from Student 11, 2001, C]

Grammatical metaphor (in italics in the above examples) is a feature of the students' nominal groups, and plays an important role in contributing to the lexical density of the text. That is, the process of distilling events into things allows processes such as reasoning and evaluation to occur within the clause rather than between clauses. The effect is the condensation of information and greater abstraction. Grammatical metaphor and the nominal group are also important resources for organising information as argument. The following examples form the Points for two of the student's Argument stage in a Discussion text. In both examples the causal aspect has been realised metaphorically.

> The nature-nurture debate has a considerable effect on the methods used in primary schools.

> Providing plenty of modelled reading is a specific example of one way to enhance the classroom environment. [Student 9, 2001]

Students' ability to utilise grammatical metaphor as a means of organising arguments and text structure differed significantly. Another differentiating aspect is grammatical intricacy as opposed to lexical density. While the mode in the majority of texts is towards the 'written' end of the mode continuum, a number of low scoring texts display features of spoken language, particularly in regards to the number of clauses linked by conjunctions. Furthermore, several of these texts were punctuated as spoken language rather than written, a factor which often resulted in marginal comments such as 'poor sentencing', or 'grammar' by the tutors.

6.7   CONCLUSION AND IMPLICATIONS

The discourse analytical approach taken in this chapter has yielded a number of findings on the role of writing for students' disciplinary learning. Firstly, the choice of Macro-genre provides insights on what learning to mean involves in this educational context. That is, through the writing of Expositions, Discussions and Evaluative Accounts, students develop thinking and learning processes such as developing a logical argument based on evidence, making an informed decision, engaging with recent research and assessing the implications for the classroom. Secondly, the presence of Micro-genres sandwiched between the various arguments in an expository structure suggests that the Micro-genres function as textual learning bridges. As textual learning bridges, descriptive genres such as the Taxonomic Report and Descriptive Report are a means through which the students review and build up knowledge of the field within an Expository structure. Other illustrative genres, such as Exemplums and Empirical Accounts, are a means through which the students make links between theory and practice. Another finding on how students learn through writing concerns the contextual variables of field, tenor and mode. The students' construal of field in their written texts suggests in general, that they come to construe the experiential world of child development as uncommonsense and abstract disciplinary knowledge. In terms of the tenor of discourse, the students come to construe themselves as novice practitioners engaging with issues of teaching and learning. In terms of the mode of discourse, the students learn to mean in a written

mode, in particular by utilising abstractions to distill information, reason, and organise arguments and text structure.

The discourse analysis approach has also shown differences between successful and less successful texts. Schematic structure does play a role in successful writing, as does understanding the social purpose of a text type. This was most clearly demonstrated in the results for the Analysis stage of the Evaluative Account genre, in which a significant number of students misunderstood the concept of review and analyse as these were intended by the tutors. These findings have relevance for the ways tutors and lecturers choose and explain assignments to students. They also have relevance for tertiary literacy practitioners who attempt to make the textual practices of a discipline more transparent to both students and their teachers.

The implications for the ways in which tutors and lecturers choose and explain assignments are that for unfamiliar tasks, the assignment's social (or pedagogic) purpose and its generic structure need to be seen in conjunction with each other. If the aim of an assignment task is for students to review and analyse current research, then students need support in conceptualising the type of text or genre that will realise this purpose. Concrete support in this case could be provided by model texts such as those used in the Appraisal analysis included in this chapter. Lecturers also need support in linguistically unpacking for students the learning process of 'analyse'. Again, one approach is to pinpoint linguistically where analysis is occurring in the students' texts. This is an area in which tertiary literacy practitioners can fruitfully work together with subject specialists. A discourse analysis approach is a useful means of 'getting started' with identifying how disciplinary practices such as analysis and applications are construed in writing. As the results show, analyses and implications occurred as easily identifiable schematic stages in the students' writing.

The findings also hold implications for learning through writing. The presence of Micro-genres in students' Macro-genres suggest that students need to draw on these descriptive genres to support their learning of new specialist concepts through writing. This is another area which has received little attention from tertiary literacy

practitioners or from disciplinary teachers. A greater understanding of the types of practices which support students' learning through writing, and how these practices are integrated into successful texts would no doubt be of valuable assistance to struggling students.

This chapter has provided a broad introduction to the textual data. The following chapter takes a more microscopic view of a small group of students' texts in order to better understand the ways in which students learn disciplinary knowledge through writing. The focus is on the types of ideational meanings realised in the students' texts.

CHAPTER 7

THE IDEATIONAL DIMENSION OF LEARNING THROUGH WRITING

Thus far the analysis of the introductory textbook and the students' texts has explored a number of disciplinary learning processes mediated through writing as well as the role of several written genres for learning. This chapter continues the discussion of the ways in which the students learn through writing by focussing on the types of disciplinary learning processes the students draw on in their writing. These processes include naming, defining, classifying, reasoning, reporting and engaging with disciplinary knowledge. Within the discussion are accounts of the students' control of linguistic tools such as abstraction, technicality, and grammatical metaphor. Detailed explanations of these linguistic features are available in the description of the analytical tools in Chapter Three.

The chapter begins with a description of the data selected for this chapter and analytical procedure used to investigate the ideational meanings in the students' texts. This is followed by the presentation of the results. As in the previous chapter the results for each aspect of the inquiry into learning through language are presented together with a discussion of those findings. A discussion of the overall findings and implications forms the chapter's conclusion.

7.1   DATA SELECTION

In the previous chapter the analytical procedure was discourse analytical in order to investigate the types of macro and micro generic choices the students were making across a range of grades as well as longitudinally. Subsequently the analysis drew on a considerable number of texts. This chapter's focus is the students'

lexicogrammatical choices, and while it similarly considers the data from the perspective of the grade awarded as well as longitudinally, it is concerned to provide a more detailed account of the types of lexicogrammatical choices the students made in their writing. Therefore a smaller number of texts have been chosen for analysis. Again, high scoring texts as well as lower scoring texts were selected to allow for a comparison of lexicogrammatical choices. In the presentation of the results and discussion the term 'high scoring texts' refers to texts in the Distinction to High Distinction grade range, while 'low scoring texts' refers to Pass and Credit graded texts. The texts selected were the students' first assignment written in this study and their final assignment. A summary of the textual data is provided in Table 7.1.

Table 7.1 Summary of textual data

		Student 12	Student 16	Student 14	Student 9	Student 10	Student 4
03/99	Grade	P	C-	P+	D-	D	HD
	Clauses	90	95	81	116	102	75
06/01	Grade	C-	C	D-	HD	HD	HD
	Clauses	281	254	186	219	320	183

The first year texts were written in response to an essay assignment asking students to consider the nature versus nurture controversy on the course of child development. This assignment had a limit of 1000-1500 words. The third year essay assignment required students to decide which theories of children's thinking and learning were most defensible for the students' future role as primary teachers. The word limit for this assignment was 2000 words. The number of clauses per assignment is provided in Table 7.1 together with the students' grades for each assignment.

7.2   ANALYTICAL PROCEDURE

7.2.1   Clause Boundaries

In the previous chapter the texts selected for analysis were segmented into the schematic stages of their relevant genres. For this chapter on ideational meanings, however, a further division into clauses was necessary. This involved identifying the processes in the text and dividing the texts into clauses. The clauses were numbered

consecutively and a blank line between clauses was left to indicate the paragraph divisions in the students' texts. The clausal analysis of the students' texts identified embedded or rankshifted clauses in order to make the clausal analysis more transparent to the reader. Embedded clauses are identified by double square brackets [[ ]]. For example:

Embedded clause as Post Modifier in the nominal group

This is strong evidence [[that genetics have a large role in personality development]].

Embedded clauses representing acts or facts occurring as Carrier in attributive relational clauses, or Token and Value in an identifying relational clauses

Act

[[motivating them to make their best effort and challenge themselves]] will not be so difficult.

[[To declare that genetics is the single driving force in a child's personality]] is [[to declare that the environment [[in which they live]] has no effect on their development]].

Fact
It is clear [[that even physical traits depend on the environment to limit or foster their expression]]

This may be due to [[the fact that their parents expect a great deal from them]]

Angled brackets, << >>, indicate the presence of included clauses. These are clauses which elaborate one participant in the main clause, and typically occur next to that participant. For example:

As a learner <<especially when confronted with a difficult task>> I often revert to self talk.

Quotations shorter than three lines were included in the clause analysis. Longer quotations were omitted from the analysis and from the texts.

A number of analytical problems emerged during the course of identifying clause boundaries in the students' texts. One of these problems was due to infelicities in the students' grammatical realisations for a written academic register. These infelicities included: rankshifted clauses punctuated as paratactic clauses (example i), and confusion between Participant and Circumstance choices (example ii).

i) Instead a more extensive assessment criteria that will help in the education of students.

Creating units that encompass relevant topics suggested by the students,

ii) Also by asking questions will keep students focused on what is being taught.

by revisiting previous information at the beginning of the lessons can help students remember

Decisions on clause boundaries for clauses like the above examples were made on a case by case basis, and the decision was informed by considering the function of the Participant, Process or Circumstance in the surrounding discourse. In other words, the non-finite clauses preceded by the preposition *by* in the second example could be interpreted as rank-shifted clauses functioning as Circumstances of Manner or ranking non-finite clauses. However, the context suggests that *by asking questions* and *by revisiting previous information* function as rankshifted clauses representing an act in a Participant role.

Other problems to do with determining clause boundaries were due to the abstract and metaphoric nature of much of the lexicogrammar of academic discourse. For example, processes can have both a congruent and a metaphorical meaning, meanings which can affect the process type and transitivity structure of a clause. Similarly, some verbs such as *indicate* and *show,* have dual properties. As Halliday (1994) points out *indicate, show,* and *demonstrate* have the dual property of functioning as 'being a sign of', and thus realise the transitivity structure of a relational process, or they can function as 'saying', resulting in a projecting verbal process. For identifying clause boundaries, this dual property of these types of verbs posed pιѻↄↄ∪ms for analysis; that is, verbs functioning as 'being a sign of' are a

single clause with the Token ^ Value participant roles, while the verbs functioning as 'saying' processes are projecting processes resulting in a clause complex.

As in the previous examples, decisions on clause boundaries were guided by the surrounding discourse and the functional meanings. One particular area of complexity was to do with verbs such as *indicate* and *show*. Analysis decisions were aided by Halliday's (1994) suggestion that if the subject were a conscious being it is a Sayer and therefore verbal process in the Transitivity system; otherwise the process is a relational one. That is:

Verbal	i)	Responding, the minister implied that the policy had been changed
processes	ii)	Responding, the minister implied a change of policy
Relational	iii)	The minister's response implied that the policy had been changed.
processes	iv)	The minister's response implied a change of policy.

(Halliday 1994: 124)

Both process types are particularly significant for reporting and making knowledge claims in academic discourse. This chapter argues that ideationally the students' texts were concerned with naming, defining and classifying phenomena associated with child development and learning. Therefore in terms of the transitivity structure, many of the clauses include processes which relate phenomena to each other, processes such as *indicate, show, means*. Of relevance to the analysis of such process types is Halliday's enumeration of the 'equative' class of processes. These are:

> [role] play, act as, function as, serves as
> [sign] mean, indicate, suggest, imply, show, betoken, mark, reflect
> [equation] equal, add up to, make
> [kind/part] comprise, feature, include
> [significance] represent, constitute, form
> [example] exemplify, illustrate
> [symbol] express, signify, realize, spell, stand for, mean]
> [neutral] be, become, remain
> (Halliday 1994: 123)

This inventory of the equative class of processes was particularly useful for distinguishing between process types and thus distinguishing between projected clauses and participants or circumstances in the clause.

7.2.2 Naming, Defining and Taxonomising

Once the texts had been segmented into clauses, the next stage of the analysis involved identifying the significant disciplinary learning processes mediated through writing. This analysis was guided by the findings in the preceding chapters on the disciplinary context, the pedagogic discourse, and genre. During preliminary analysis it became apparent that some overlap would occur between the discussion of disciplinary learning processes such as naming and taxonomising in this chapter and the preceding chapter on genre. In the previous chapter, the processes of naming, defining and taxonomising were discussed in the context of Descriptive Reports and Taxonomic Reports. That is, naming or taxonomising was discussed as part of the schematic structure of the genre. In this chapter, the discussion of such processes included the occurrence of these processes in a Micro genre such as a Descriptive Report as well as part of the Elaboration of an Argument in a Macro-genre structure. To distinguish between the two occurrences was considered important, therefore the clausal analysis of the students' texts included a simplified genre schematic structure analysis. An example of a text showing the clausal analysis overlaid with the genre analysis is provided in Appendix B.

In the pedagogic discourse chapter (Chapter Five), the point of departure for analysis was naming and defining. In that chapter, the process of naming as instantiated in the textbook was considered as similar to defining. The discussion focussed on the way the process of naming or defining built up technicality in the discourse. Furthermore, naming was considered as a precursor to ordering phenomena in taxonomies. Preliminary analysis of the students' texts, however, indicated that it was necessary to distinguish between naming and defining. For example:

> Vygotsky's Zone of Proximal Development is another important
> aspect of his theory.
> This is [[where a child moves beyond self-initiated discovery into
> assisted discoveries and peer collaboration]],

In the first clause, the technical concept of the Zone of Proximal Development is named or introduced. In the following clause this concept is defined through

relational clause grammar with the anaphoric reference item *This* functioning as Token and the explanation as the Value. Thus, naming and defining were realised as a two-step process.

Distinguishing between naming and defining allowed for an investigation of other means in which technicality was introduced into the students' texts. As the above example shows, the first clause not only introduces the concept of ZPD, but also links it through relational clause grammar to Vygotsky's theory. The Value in the first clause also has an evaluative element as Epithet in the nominal group structure (*another important aspect of his theory*). Evaluation is an important feature to distinguish in the students' texts as it plays a role in the Argument structure of Expository and Discussion genres. In addition, naming frequently occurred in possessive relational clauses, in which parts of a theory or concept are explicated. For example:

> Sternberg's 'triarchic theory of intelligence' has three categories –
> these being componential, experiential and contextual.

In other words, the initial naming of a concept as well as the naming of its taxonomic, part-whole, or part-part features occurred in the one relational clause, rather than as a two step process as in the previous example.

Another factor when considering naming as a means of introducing technicality in the students' texts was generic structure. The chapters of the students' textbook tended to begin with an anecdotal vignette from everyday experience, which was followed by the technical naming of the observed phenomena (Chapter Five). In the students' text, however, the Point^Elaboration sub-stages of expository or Discussion genres appeared to be the way in which technical concepts were introduced and discussed. Comparing the ways in which students introduced technical terms therefore appeared to require the perspective of the textual metafunction, in particular the systems of Theme and Information. As this chapter is primarily concerned with ideational meanings, a large scale Theme and Information structure analysis was outside the scope of the chapter. Instead, the ways in which technicality was introduced was examined primarily from an ideational perspective.

That is, it was considered in the environments of defining, classifying or making links to other aspects such as related theories or classroom practice.

7.2.3   Technicality and Abstraction

A measure of the amount of technicality in the students' texts was undertaken in order to provide a means of contrast between the students' texts. Decisions on which terms to include as technical were guided by the discussion of technicality in Chapter Three. However, there remained borderline cases between technical and semi-technical terms, for example when a Deictic element served to identify a theory; for example, *Vygotsky's social learning theory*. It was not clear whether *social learning theory* was the identifying name of Vygotsky's theory or a generic classification, or indeed both. These cases posed particular problems due to my own limited knowledge of the field of child development and the pre-service teachers' limited knowledge. In cases such as Vygotsky's social learning theory, the nominal group was not included as a technical term. Non-technical elements in complex nominal groups such as Deictics and semiotic abstractions (e.g. ***Bruner's notion of discovery learning***) were not included in the entry for the technical term. Technical terms used as Epithets in nominal groups were included (e.g. *scaffolded instruction, metacognitive skills*). Finally, technical terms were only counted once, so as to eliminate the necessity to count repetition of the technical item through cohesive reference.

The section on technicality and abstraction concludes with a discussion of abstraction. To measure technicality in the students' texts, the full texts were considered. For the discussion of abstraction in the students' text, however, one Argument with the Point Elaboration structure was selected from each student's text. The full text was considered when measuring technicality as only the full text would provide a comprehensive picture of the types and amount of technical terms used by the students in their writing. Only a section of each text was used to measure abstraction, as the purpose of the analysis was to determine to what degree the students' construed the discourse as abstract or concrete. This aim can be achieved

by selecting a representative section of the students' text, in this case an Argument stage from each text. As there were differences in the degree of concreteness and abstractness within the stages of each text, two representative Arguments from each text were selected. Obvious more concrete schematic stages such as Exemplums were excluded from the analysis.

The main analytical tool for the discussion of abstraction was the provisional network of thing types elaborated in Chapter Three. For the purposes of analysis only the Thing in each nominal group was included. However, as many of the technical terms in the discourse of child development and teaching and learning have the nominal group configuration of Classifier^Thing, the expanded nominal group was included in the case of technical terms in order to distinguish between technical terms and semi-technical terms. For example:

semi technical terms	technical term	
creativity	big C	creativity
	little C	creativity
learning	peer	learning
	Classifier	**Thing**

As was argued in Chapter Three, it is important to distinguish semi-technical terms from technical terms and from other forms of grammatical metaphor as the presence of semi-technical terms in the students' texts indicated that the students were engaging with issues or phenomena central to the discipline. Other items included in the analysis were reference items referring to nominal groups. It should also be pointed out that each Thing type needed to be considered within the surrounding environment of the clause as the same term could represent different Thing types. For example, (the Thing in each example is in bold script):

Thing type: abstract generic: the social and cultural **nature** of development

Thing type: abstract technical: **Nature** is the type of development that ...:

The full analysis of Thing types for each student's text excerpt together with the results is included in the Appendix (Appendix E).

7.2.4 Reasoning and Explaining

An important component of learning to mean through writing is reasoning and explaining. Two means of investigating the ways in which reasoning and explaining were construed in the texts are analysis of the logical relations between clause complexes and consideration of the types of Participants, Processes and Circumstances inside the clause. Providing a detailed account of the ways in which sequences of reasoned arguments were built up in the students' texts, however, required in addition to consideration of the logical relations between clause complexes the perspective of the textual metafunction and the system of Theme. Such an analysis was beyond the scope of this chapter as was a detailed consideration of all the logical relations in the students' texts. Instead the sub-section on reasoning and explaining is limited to an analysis and discussion of explanations addressing the questions of 'why' and 'how' in the students' texts. In other words, the analysis did not include conditional, concessive, or temporal relations. Instead the analysis focussed on causal relations of reason, result and purpose, and the manner relation of means (Halliday 1994). Implicit cohesive relations (Martin 1992) between clause complexes were not taken into account.

For the analysis of reasoning and explaining in the students' texts the whole texts were taken into account and instances of reasoning counted. Averages were calculated for the amount of reasoning in the lower scoring texts and the higher scoring texts. The lexicogrammatical resources utilised by the students to express reasoning are elaborated in the results section of this chapter.

7.2.5 Reporting Knowledge

In the students' texts there were many instances in which the explanations of phenomena were built up by reporting the beliefs and views of theorists in the field. Preliminary analysis showed that students not only reported theorists' views but also provided information on what theorists and empirical scientists did (for example,

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carried out experiments etc.). To some extent this aspect of reporting was discussed within the Micro-genre section on Empirical Accounts. The purpose of the section on reporting knowledge was to investigate the types of grammatical choices students made when reporting the beliefs of theorists in the field. The analysis focussed on the Participants, Processes and Circumstances in the clause, and did not take into account the logical relations between clauses. It also did not take into account the students' referencing choices such as integral or non-integral citations (Swales 1990) as this was beyond the scope of the current investigation.

The analysis took the whole texts into consideration. The lexicogrammatical resources utilised to report knowledge claims are described in the results section of this chapter, and these instances were counted for each text. Averages for the amount of reasoning per text for the lower scoring students and the higher scoring students were calculated.

7.2.6   Engaging with Disciplinary Knowledge

The term 'engaging with disciplinary knowledge' is used in this thesis as a superordinate term. It refers to students' involvement in disciplinary practices such as applying theories to the classroom, observing and interpreting children's development with the insights of child development theories, and evaluating disciplinary knowledge. The term engaging with disciplinary knowledge is also a means of establishing a contrast with an 'empty vessel' approach to learning, in which the learner is seen to passively absorb knowledge.

The analytical procedure for this section was similar to the procedure for the preceding section on reporting knowledge claims. That is, the analysis took the whole texts into consideration, identified the main lexicogrammatical resources for engaging with disciplinary knowledge, and counted these instances across the first and third year texts. In terms of lexicogrammar, the analysis was mainly restricted to ideational meanings; however, the analysis did to an extent take into consideration the system of Modality from the interpersonal metafunction.

As the amount of engagement in each text appeared to be considerable, classifying criteria were introduced. The main criteria were explicit engagement, which referred to subjective, personalised forms of engagement, and implicit engagement, which was considered as a more impersonal form of engagement. The sub-categories of types of engagement were identification, recommendations, stance, and 'understanding'. The explanations of these categories and their lexicogrammatical realisations are elaborated in the corresponding results sub-section of this chapter.

7.3   RESULTS

The presentation of the results begins by focussing on the linguistic resources students drew on to define technical concepts. This is followed by the results for the ways in which students order or classify technical phenomena or concepts. The discussion of these results includes a discussion of the results from a longitudinal as well as a ranking (grade) perspective.

7.3.1   Technicality and Defining

The process of defining a technical concept or phenomenon is one means through which technicality is built up in the discourse. For the education students' learning, the process of defining contributes to the students' understanding of the factors that influence a child's social, physical and cognitive development and their implications for learning. As was argued in Chapters Three and Five, a number of technical terms in child development have a commonsense, vernacular meaning. The process of defining for the education students therefore sometimes involved reassigning a new, specialist meaning to a vernacular term. In the students' texts the main means through which an everyday concept was reassigned a technical meaning was through the semiotic resource of elaboration through relational clause grammar. In the following examples, the everyday concepts of nature (the concrete natural world around us) and nurture (a concrete process) are reassigned field specific meanings associated with influences on child development.

N.B. student texts are unedited, and technical terms are in bold.

I	perceive	**nature**	to be	the characteristics and skills of an individual that formed genetically and which are past down to the child at the time of conception from the individual parents
		(Token	(rel: id)	(Value)

[Student 12, 03/99, cl. 7-8, P]

I	feel	**nurture**	is	the events, situation and people involved in the child's environment that effect the growth and development of the child
		(Token)	(rel: id)	(Value)

[Student 12, 03/99, cl. 9-10, P]

In these examples, the definitions occur within the transitivity environment of a projecting mental process with the student writer construed as Senser. This construal of a definition, in which the interpersonal dimension is thematised, functions to emphasise that it is the student's own understanding of the concepts of nature and nurture. Indeed, the student implicitly contrasts her own definitions by reporting the textbook definition in the following clause, again through a projecting process.

Berk (1997, 7)	conveys	**nature**	to be	'The complex forces of the physical and social world that children encounter in their home, neighbourhoods, schools and communities.'
		(Token)	(rel: id)	(Value)

[Student 12, 03/99, cl. 11-12, P]

Definitions of nature and nurture also occurred in Student 16's first year text and Student 10's first year text. These students relied on the textbook definition to construe the Value in the relational clause, as in the above example.

In Chapter Three the case was argued for some terms to be classified as semi-technical. Semi-technical terms are concepts or phenomena that are central to the concerns of the discipline, yet they are not sufficiently unambiguously defined or classified in order to qualify as a technical terms. Semi-technical terms in child development tend to have a vernacular meaning as well as a field specific meaning within the various branches of child development theory. Four definitions of semi technical terms occur in the students' texts, that is, in Student 16's third year text, Student 12's third year text, and Student 4's third year text. These definitions are

construed through relational processes, as well as elaboration construed through paratactic expansion in the nominal group. That is:

i) relational clause

Creativity	is	[[basically having the ability to produce new and original ideas and things]].
(Token)	(rel: id)	(Value)

[Student 16, 06/01, cl. 63, C]

Play	has all too often been used to infer	something rather trivial and non-serious, the polar extreme to work rather than, as in a child context, the essence of serious, concentrated thinking [citation].
(Token)	(rel: id)	(Value)

[Student 4, 06/01, cl. 142, HD]

ii) paratactic expansion in the nominal group

young children seldom engage in	rehearsal	(the memory strategy of repeating information) or
	(nom.gr. 1)	(nominal group 2)
	organisations	(strategy of grouping information into meaningful chunks) [part of a citation] [Student 12, 06/01, cl. 127, C-]
	(nom. gr. 1)	(nominal group 2)

Elaboration at clause rank construed through a relational process was the main means of defining technical terms in the students' texts. That is, just under half of all the definitions (24 from 50) were construed as relational processes (see Table 7.2). Elaboration also occurred to a lesser extent at the rank of clause complex. In some instances the students construed definitions through clause complex sequences with bridging or anaphoric reference items functioning as the Token in a relational clause and the explanation as the Value (example iii). Explanations for concepts were also construed as non-defining relative clauses (example iv), and through cohesive relations (example v). Furthermore, there is one instance of implicit elaboration, in which an explanation of the concept is given in the following clause (example vi).

iii) clause complex sequences with reference

20. Behaviourism further developed and extended theories on social behaviour.
21. Albert Bandura introduced **observational learning**
22. the most influential study was devised by Bandura (citation) on [[how children imitate]] and [[model]].
23. Bandura (citation) conducted an experiment with two groups of children
24. one group showed [Phenomenon:] [[a woman hitting a life size plastic doll.]
25. The other group was shown [[a woman playing quietly with the doll]].
26. When the woman left
27. both groups played with the dolls in the same manner [[that was shown to them]]
28. by copying the women's behaviour.
29. **The theory** being [[that the behaviour was learnt through watching the woman and imitating her behavior]]. (citation).

[Student 14, 03/99, P+]

55. Ivan Pavlov has a strong belief [[that "behaviours are learnt]]
56. and explains it as 'classical conditioning' " (citation).

[Student 10, 03/99, D]

iv) non-defining relative clause

265. One of Maslow's major concepts is that of '**self-actualisation**',
266. which means that we use our abilities to the limit of our potentialities.

[Student 12, 06/01, C-]

v) cohesive relation (that is)

14. One of the concepts [[associated with the nature argument]] is [[that children are **organismic**]],
15. that is, they have in built "psychological structures …[[that underlie and control development]]"

[Student 9, 03/99, D-]

vi) implicit elaboration

115. Assisted discovery includes scaffolding.
116. Students are given help or a framework [[which they use when independently learning]].

[Student 10, 06/01, HD]

An additional means of construing definitions in the data is through a mental or verbal process with the explanation of the concept construed as a Circumstantial element of Role (guise). The Senser or Sayer is a specific human participant, usually a theorist or authority in the field. As with example vi) this way of defining a technical concept is more implicit as it is defined in terms of how the theorist

regarded or described the concept. This means of defining a concept also occurred in the students' textbook (Chapter Five).

vii) mental or verbal process with the explanation as Circumstance of Role

Case	perceived	**cognitive development**	"as a matter of increases in information-processing capacity that results from more efficient strategy use." [citation]
(Senser)	(Process)	(Phenomenon)	(Circumstance: Role)

[Student 12, 06/01, cl. 77, C-]

A synoptic account of the technical terms which were defined in the students' texts is shown in Table 7.2. This table also indicates the students' lexicogrammatical choices for construing definitions

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Table 7.2 Results for defined technical and semi-technical terms in the students' texts

03/99, Student 12, P	03/99, Student 16, C*	03/99, Student 14, P+	03/99, Student 9, D-	03/99, Student 10	03/99, Student 4, HD
nature (7-8) Id / nurture (9-10) Id / nature* (11-12) Id	nature* (10) Id. / nurture* (11) Id. / nature (52) Id. / nurture (67) Id.	classical conditioning (9) Ng. / observational learning (20-29) cc. sequence	organismic* (14-15) cohesion / mechanistic theory* (52-53) Rel. cl. / class. conditioning (60). / operant conditioning (90) Id.	nature* (16) Id / organismic theory* (17-18) cc. sequence / nurture* (41) Id. / class. conditioning* (55-56) cc. sequence / operant conditioning*	-

06/01, Student 12, C-	06/01, Student 16, C	06/01, Student 14, D-	06/01, Student 9, HD	06/01, Student 10, HD	06/01, Student 4, HD
assimilation (19) Ng. / accommodation (19) Ng / cognitive dev. (77) Mental / memory capacity* (78) Mental / Inform. processing* (107) Mental / rehearsal (127) Ng. / long term memory (134-135) Rel. cl. / metacognition (138-139) Rel. cl. / ZPD* (170-171) Rel. cl. / intrinsic motivation* (253) Id / extrinsic motivation* (258) Id / self-actualisation* (265-266) Rel. cl.	creativity (63) Id. / convergent (69-70) Rel. cl. / divergent* (69, 71) Rel. cl. / long term memory (183) Id. / metacognition (185) Id. / metacognition (207) Id. / ZPD (228-229-217) cc. sequence	-	self-directed learning (28-29) Rel. cl. / memory-analytic [ability] (153, 155) Id. / creative-synthetic (153, 156) Id. / practical contextual (153-154) Id.	ZPD (106-107) cc. sequence / scaffolding (115-116) Implicit / metacognition (150) Ng. / divergent thinking (191) Id. / intrinsic motivation* (271) Id. / extrinsic motivation* (272) Id.	ZPD (86) Id. / scaffolded instruction (87-88) Rel. cl.

Key: *Id.* = Identifying relational clause; *Ng.* = paratactic expansion in the nominal group; *cc. sequence* = clause complex sequence with anaphoric reference; *Rel. cl.* = non-defining relative clause; *Mental* = Mental process with circumstance of Role, * = quotation. The numbers in brackets refer to the clause number(s) in which the definition occurred.

When considering the role of language in students' learning of specialist disciplinary knowledge, it seems reasonable to assume that the process of defining technical terms would feature to a considerable extent in the students' writing. The inclusion of explanations of technical terms can show an understanding of concepts, as well as allow tutors to monitor students' understanding of technical terms. Indeed, marker commentary on some of the texts from the genre data set suggests that students are expected to explain new concepts in order to show understanding, and not to assume the position of shared knowledge. In other words, from the perspective of tenor students are expected to construe themselves as novice practitioners and not as disciplinary 'insiders' (Chapter Six).

However, the results for the definition of technical terms shown in Table 7.2 show that definitions are not a predominant feature of the students' texts. Five of the twelve texts include three or fewer definitions per text, while two of the higher scoring texts have no definitions. Quotations did feature in a number of the definitions both in first year and third year, and are indicated by an asterisk after the technical term in the table. There was no clear distinction between the higher scoring texts and the first and third year texts in the use of quotations to define terms or concepts. That is, in first year one third of the definitions in the three lower scoring texts defined technical terms through direct quotations (3 of 9 definitions), while more than two thirds of the definitions in the higher scoring texts are direct quotations (7 of 9). In third year this trend is reversed with quotations in definitions featuring slightly more in the lower scoring texts. In other words, seven of the nineteen definitions in the two lower scoring texts included quotations, while only two of the ten definitions in the four higher scoring texts include quotations.

Without questioning the students about their textual practices it is not possible to conclusively determine why some students chose to define technical terms by incorporating quotations. One possibility is that the quotations lent the students' definitions authority, while another more likely possibility is that the students found it difficult to define new concepts 'in their own words', as undergraduates are frequently

exhorted to do in their writing. This brings the discussion to the general function of definitions for learning.

No doubt definitions in students' texts have a display or 'knowledge telling' function: they demonstrate to the tutor that the student can explain the concept and has some understanding of it. Definitions, however, also function for the student as a means of clarifying or reminding. That is, they can serve to remind the student what the concept means or what the phenomena referred to is. Evidence for this function of definitions for learning can be found by considering the lexicogrammar of some of the students' definitions. Definitions construed through non-defining relative clauses and through paratactic expansion in the nominal group suggest that the explanations functioned more as a 'gloss' or a reminder to the student than as a definition. For example:

This was the basis for the theory of learning known as	classical conditioning:	the idea [[that a neutral stimulus can produce a certain effect when paired with another stimulus [[which you would normally associate the effect with]]]].
	(nom.gr. 1) TECHNICAL CONCEPT	(nominal group 2) GLOSS [Student 9, 03/99, cl. 60, D-]

Self-directed learning << >> is a principle [[I would employ to achieve both these goals]].
<<where students help control the pace and content of their learning>>

[Student 9, 06/01, cl. 28-29, HD]

In these examples, the technical concept precedes the explanation either as the second nominal group in a nominal group complex, or as a non-defining relative clause (in the above example, the non-defining relative clause is an included clause). In these examples, the 'glossed' explanation contains no tonic prominence. Rather the tonic prominence falls on the technical term. This 'glossing' of a technical term was also noted by Martin (1991) in an introductory science text, in that context functioning to remind students of the way scientists talk. It is worth noting that Student 12, one of the lower scoring students, incorporated this 'glossing' aspect of definitions in her third year essay. However, the explanation has the tonic prominence, while the technical term is the one that is glossed. For example:

Adaptation involves [[building schemes]]	[[interpreting the world through current schemes]]	(assimilation),
	(nom.gr. 1) EXPLANATION	(nominal group 2) TECHNICAL CONCEPT [Student 12, 06/01, cl. 19, C-]

This reversal suggests reluctance on the part of the student to adopt the technical term and actively use it as part of her technical vocabulary. The student did not incorporate the glossed technical terms at a later stage in her text. In the above example it seems the technical term appears as an afterthought resulting in an unsatisfactory introduction of the technical term.

The introduction of technical terms is also less successfully managed by Student 14, a student who scored poorly in her first year text. That is, (technical terms are in bold, while the associated explanations are in italics):

Excerpt 1

Behaviourist Watson conducted an experiment on Albert an eleven month old infant to find if he could get *the child to respond in the manner he wanted* "**classical conditioning**" (citation) using a furry rat. He taught Albert to fear the rat and anything that was white and furry. Watson was convinced that classical conditioning showed "environment was the supreme force in child development" (citation).

[Student 14, 03/99, P+]

Excerpt 2

Albert Bandura introduced **observational learning** the most influential study was devised by Bandura (citation) on how children imitate and model. Bandura (citation) conducted an experiment with two groups of children one group showed a woman hitting a life size plastic doll. The other group was shown a woman playing quietly with a doll. When the woman left both groups played with the dolls in the same manner that was shown to them by copying the women's behaviour. **The theory** being *that the behaviour was learnt through watching the woman and imitating her behaviour* (citation).

[Student 14, P+]

In the first excerpt the technical term 'classical conditioning' disrupts the logical relation of enhancement between the one clause (*if he could get the child to respond in the manner he wanted)* and the second non-finite clause (*using a furry rat*), which provides the Circumstantial information of Manner. It is not clear from this construal

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whether the student would be able to generalise from the process in the described in the experiment to the phenomenon. The student's text would have been more successful if the technical term was first clearly named or introduced through relational clause grammar, then defined again using either relational clause grammar or a non-defining relative clause to link the technical term to an explanation. In the second example the student again uses an instance of a phenomenon to define a technical concept rather than generalising from the instance; that is, **The theory [observational learning]** being *that the behaviour was learnt through watching the woman and imitating her behaviour.* In both excerpts the mechanism of grammatical metaphor would have further assisted the student to shift from the instance to the general. For example:

the student's realisations: **alternative realisations:**

if he *could get* **the child** *to respond* in the manner [[he wanted]]	the learning of conditioned responses.
PROCESS WITH SPECIFIC PARTICIPANTS (*explanation as an instant*)	NOMINAL GROUP WITH 3 NOMINALISED ABSTRACTIONS (*explanation as a generalisation*)

[[that the behaviour was learnt *through watching* the **woman** and *imitating* **her** behaviour]]	the learning of behaviours through observation and imitation
RANK-SHIFTED PROCESSES WITH SPECIFIC PARTICIPANTS	NOMINAL GROUP WITH 4 NOMINALISED ABSTRACTIONS

Alternative textualisations for both excerpts utilising relational clause grammar to define and grammatical metaphor to distill are given below.

Behaviourist Watson conducted an experiment on Albert an eleven month old infant to find if he could get the child to respond in the manner he wanted using a furry rat. He taught Albert to fear the rat and anything that was white and furry. **This process is   NAMING referred to as "classical conditioning"** (citation*). Classical conditioning is the   DEFINING learning of conditioned responses.* Watson was convinced that classical conditioning showed "environment was the supreme force in child development" (citation).

Observational learning refers to the learning of behaviours through observation and   *DEFINING* imitation.

The extracts from Student 14's texts show a number of grammatical infelicities from the perspective of the register variable mode. There are non-finite clauses punctuated as sentences as well as clause complexes punctuated as single clauses. Correcting

these problems in the students' texts; however, would neither greatly improve the text, nor make the text more authoritative. In this student's textualisation, greater awareness of how grammar construes definitions would have assisted the development of the text, as well as helped to clarify the students' thinking. Grammatical metaphor is also implicated in assisting the student to distill information in order to move from specific instances to generalisations.

Grammatical metaphor was an intrinsic part of the students' definitions. In particular, the type of grammatical metaphor involving a shift from process to entity construes explanations of phenomena (see Type 2 [i] in Table 3.4, Chapter Three). That is, embedded clauses representing acts occurring as Value in identifying relational clauses (i), as well as embedded clauses as Post Modifier in nominal groups (ii) were the main means through which the students described phenomena. For example:

Embedded clauses are identified by double square brackets [[ ]]. As in previous chapters text excerpts are unedited.

i) *grammatical metaphor as embedded clauses representing acts*
Creativity is basically [[having the ability to produce new and original ideas and things]] [Student 16, 06/01, cl. 63, C]

Adaptation involves [[building schemes]], [[interpreting the world through current schemes]] (assimilation) [[and adjusting schemes to better fit with their environment]] (accommodation). [Student 12, 06/01, cl. 19, C-]

ii) *grammatical metaphor as Post-Modifier in elaborating nominal groups*
the characteristics and skills of an individual [[that formed genically and which are past down to the child at the time of conception from the individuals parents]] [Student 12, 03/99, cl. 8, P]

the idea [[that a neutral stimulus can produce a certain effect when paired with another stimulus which you would normally associate the effect with]] [Student 9, 03/99, cl. 60, D-]

This type of grammatical metaphor occurred in the lower scoring and higher scoring texts, as well as in the first and third year texts. In the students' own explanations (that is, without quotations) embedded clauses functioning as acts or post-modifying nominal group elements are the predominant type of metaphor. Only in Student 9's first year distinction-scoring text is there an instance of further layers of grammatical

metaphor in a students' explanation. Instead of a rank-shifted clause functioning as Value in a relational clause, nominalisations feature as Head and Post-Modifier in an abstract nominal group.

Operant conditioning	involves	the *knowledge* of *consequences* both positive and negative	
(Token)	(Process)	(Value) nominal group	
		nominalisation (1)	nominalisation (2)

As this metaphorical layering in an explanation of a technical concept only occurs in one student's text it is not possible to comment on its role in students' writing development. However, the role of metaphor in contributing to the abstract dimension of the texts is taken up in a later section of this chapter.

7.3.2 Technicality and Ordering (Classifying)

In Chapter Five it was argued that naming phenomena and thereby introducing the technical vocabulary of the discourse enabled the ordering and classification of the experiential world of child development. Once phenomena or theories which interpret phenomena have been given a technical name, they can be systematically related to each other through taxonomies (Wignell et al. 1993). In the student texts taxonomic relations were realised through transitivity, such as through attributive relational processes (i), identifying relational processes (ii), and existential processes (iii). In the following examples taxonomic relations are in bold.

i)   *attributive relational process*
        It [motivation] can be both **intrinsic** and **extrinsic** [Student 12, 06/01, cl. 252, C-]

                            ┌── extrinsic motivation
        types of motivation ┤
                            └── intrinsic motivation
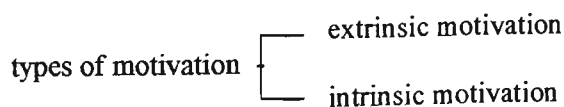
ii)   *identifying relational process*
        Sternberg's 'triarchic theory of intelligence' has three categories – these being componential, experiential and contextual.   [Student 16, 06/01, cl. 122, C]

                                                              ┌─componential
        components of the triarchic theory of intelligence ─┤─experiential
                                                              └─textual

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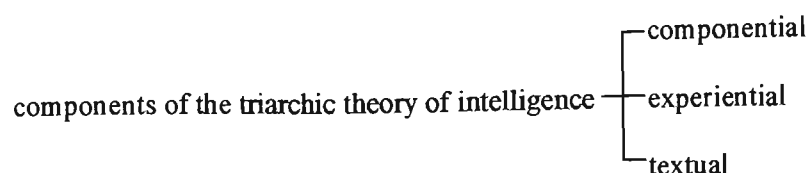
iii) *existential processes*
Piaget believed
that there were **four distinct stages of cognitive development,**
which could be associated with approximate ages.
The stages consisted of the **sensorimotor stage** (approx. birth to two years), the **preoperational stage** (approx. two to seven years), the **concrete operational stage** (approx. seven to eleven years), and the stage of **formal operations** (approx. eleven years plus).
[Student 9, 03/99, cl. 30-33, D-)

```
                                          ┌── sensorimotor

                                          ├── preoperational
components in Piaget's stage theory ──┤
                                          ├── concrete operational

                                          └── formal operations
```
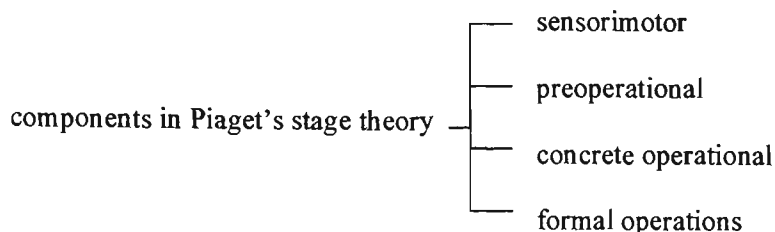
Taxonomies were also established through the logogenetic unfolding of the text (iv). More detailed taxonomies with recursive dimensions were established in this way such as through Taxonomic Reports functioning as Micro-genres in a Macro-genre environment (Chapter Six).

iv) *logogenetic unfolding of the text*

Development can be classified into three main areas, biological, cognitive and socioemotional (citation). In regard to Lysaght (citation), ideas on biological development, **biological development** includes changes in aspects of physical development, the influence of genes, and the effects of hormonal changes.
The cognitive processes have been researched in lengthy detail by such theorists as Piaget and Vygotsky. The aspects of cognitive development involve changes in thinking, learning and language (citation).
The third area that plays a role in development is **socioemotional processes,** which I feel involves the features that shape our identity, the emotional feelings we feel towards other individuals and the way we deal and interact with others. These ideas can be supported by Lysaght (citation). Socioemotional processes 'include our relationships with others, our emotional life and unique identity we each develop.
(Student 12, 03/99).

The taxonomic relations established in this text were from part to whole.

```
                                                           ┌── phys. dev.
                              ┌──── Biological development ──┤── genes
                              │                              └── hormonal
                              │                              ┌── thinking
Development ──►──┤──── Cognitive development ──┤── learning
                              │                              └── language
                              │                              ┌── relations
                              └──── Socioemotional dev. ──┤── emotions
                                                           └── identity
```
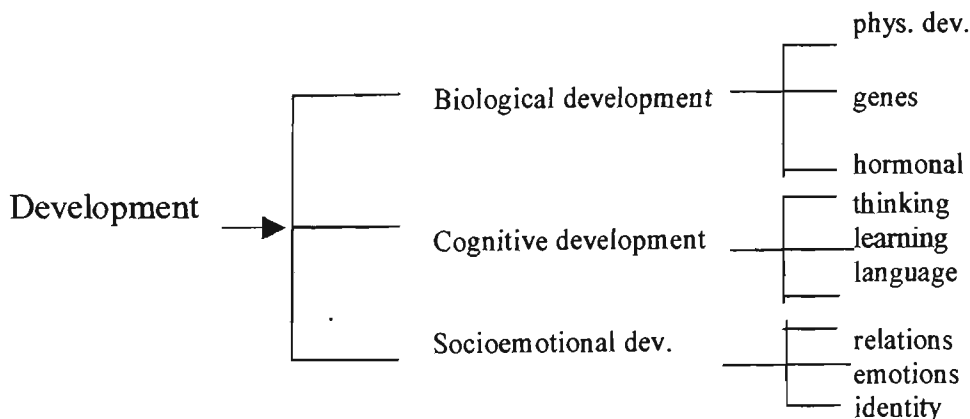
The students also established taxonomic relations in their texts by utilising the potential of the nominal group, usually in a Classifier^Thing configuration (v). As was noted in the analytical tools chapter, many of the technical terms in child development and learning contain a classifying dimension. For example:

v)   *Classifier^Thing*

      constructivist education
      reciprocal teaching
      cooperative learning
      intrinsic motivation
      extrinsic motivation

Less technical taxonomic relations and classifications were likewise established through the above configuration of Classifier^Thing. They were also established through paratactic expansion in the nominal group (vi), and as Post-Modifier (vii).

vi)   *paratactic expansion*

      Barbara Burks, a respected **psychologist**
      John Locke, a leading British **philosopher**

vii)   *Post-Modifier*

      the effects of **hormonal** changes
      the aspects of **cognitive** development

For the purposes of this study generic human participants such as *behaviourists* and *neo-Piagetians* were also considered as classifying elements as they represent the grouping together of a particular sub-set of theorists with a similar theoretical orientation.

The results for the distribution of taxonomies and taxonomic elements in the students' texts are discussed in two parts. The taxonomies established through the configurations described in examples i)-iv) are referred to as explicit technical taxonomies and are considered first. The discussion of the results for other types of taxonomic relations follows this.

The results for the distribution of explicit technical taxonomies are shown in Table 7.3. As the results show, explicit technical taxonomies featured in the students' texts, yet were not an intrinsic element of either the first or third year texts. Explicit elaborated taxonomies only occurred in half of the first year texts and four of the six third year texts. That is, they did not occur in the first year texts of Students 16, 14 and 10, nor did they occur in the third year texts of Students 14, and 9 (the results for these students have therefore been omitted from the table). Student 12 included the largest amount of taxonomies in her third year text (total 7). However, there was no noticeable difference in the distribution of taxonomies between the low and high scoring texts, nor was there between the first and third year texts.

Table 7.3 Distribution of explicit technical taxonomies in the students' texts

03/01, Student 12, P	03/01, Student 9, D-	03/01, Student 4, HD
development (p/p, recurs., 13-21)	cognitive development (p/wh, 33)	big Five personality traits (p/wh, 8)

06/01, Student 12, C-	06/01, Student 16, C	06/01, Student 10, HD	06/01, Student 4, HD
adaptation (p/wh, 19) Piaget's stage theory* (p/wh, 39) store model (p/wh, 113) metacog. (p/p, 140) triarchic theory (p/wh, recurs., 187) Gardner's intelligence theory (p/p, 213) motivation (p/p, 253)	triarchic theory of intelligence (p/wh, 122) intelligence (p/p, 128-129)	motivation (p/p, 270-272)	metacogn. (p/wh. 49) play (p/p. 158)

The results for the distribution of explicit technical taxonomies do not suggest that this type of taxonomising played a major role in the pre-service teachers' learning through writing. That is, detailed technical taxonomies of aspects of theories, components or types of phenomena were not a distinguishing feature of the texts. This suggests that the first and third year texts were not overtly focussed on 'retelling' the factual or established information provided in the students' textbooks. This issue is revisited in the conclusion to this chapter.

The presence of the technical taxonomies in the students' texts makes several further observations possible. First, in the student texts classifying and elaborating on types or components of phenomena can simultaneously function as a means of introducing technical terms into a text. Secondly, in this discourse as instantiated in the students' texts technical taxonomies can include semi-technical terms in the branches of the taxonomy as example (iv) above shows. This feature has repercussions for the ways in which technical terms are theoretically defined (see the discussion of technicality in Chapter Three). Finally, the taxonomies listed in Table 7.3 are explicit ones. That is, they elaborate linguistically the branches of specific taxonomies by explicitly naming the super-ordinate element and its parts (e.g. *The components of Vygotsky's stage theory are x, y, z*), or explicitly naming types of phenomena. However, implicit taxonomies also occurred in the students' texts. Implicit taxonomies tended to occur above the clause as a means of organising the discourse as well as ordering theories and approaches to learning. These implicit taxonomies have significant potential as a learning tool. For the purpose of discussion a distinction is made between implicit Macro and implicit Micro taxonomies.

The term 'implicit Macro-taxonomy' refers to those implicit taxonomies which underlie the discourse organisation of the texts. In the first and third year texts, it is possible to reconstruct an implicit Macro-taxonomy for each text. In the first year texts, the taxonomies begin with the two main influences on child development (that is, nature or nurture). Subsequent branches of the taxonomies detail associated theorists, their approaches and areas of interest, while a third area of the taxonomies outlines the implications of the various theories for classroom practice. The implicit Macro taxonomies in the third year texts map the theories of child development and aspects that are to influence the students' future teaching practices. The type of information included in the taxonomies varies from text to text, as does the amount of detail and links that are established between the various branches of the individual taxonomies. An example of a reconstructed implicit Macro-taxonomy is shown in Figure 7.1. This taxonomy has been reconstructed from Student 9's first year text.

Influences on child development

- nature
  - children are organismic
  - development is universal
  - *(overview)*
    - Piaget's stage theory
    - twin studies
    - *(theoretical approaches)*
      - children at different ages have different capabilities
- nurture
  - influence of surrounding environment
  - children are passive reactors
  - *(overview)*
    - Behaviourists
    - *(theoretical approaches*
      - Pavlov
      - Watson
      - Skinner
      - *(aspects)*
        - classical conditioning
          - modelling
          - positive reinforce-ment
          - *(classroom application)*

Figure 7.1 A reconstructed implicit Macro-taxonomy from student 9's 1991 text

The taxonomy in Figure 7.1 is unlike a traditional scientific taxonomy in that it displays overlapping branches, and a number of the branches are not directly linked to preceding ones. As a learner taxonomy, however, it is a diagrammatic representation or map of the student's current understanding of disciplinary knowledge and the connections and relations the student draws between various aspects. In other words, it is a map of the student's current understanding of the field. Such implicit taxonomies have the potential to play an important role in making students aware of the role of writing in their disciplinary learning. This issue is taken up in the conclusion to this chapter.

The second set of results shows the taxonomising relations which are realised by utilising the potential of the nominal group. The results for the number of nominal

groups that include a classifying element are shown in Table 7.4. In the lower scoring first year texts (Students 12, 16 & 14), the average number of nominal groups that contained a classifying element per text was approximately 14. In the higher scoring first year texts (Students 9, 10, & 4) the average number of nominal groups that contained a classifying element per text was approximately 24, a considerably higher number. Although the third year texts were longer than the first year texts (2000 word limit as opposed to 1500), there is a significant increase in the amount of taxonomising relations realised by classifying elements in the nominal groups. In the two lower scoring texts (Students 12 & 16) the average was 49 per text, while the average for the higher scoring texts (Students 14, 9, 10, 4) was 39. In other words, the trend in first year for the higher scoring texts to contain more classifying elements was reversed in the third year. Tables showing the nominal groups with classifying elements for each text are provided in Appendix F.

Table 7.4 Summary of distribution of nominal groups with a classifying dimension

	Student 12, P	Student 16, C-	Student 14, P+	Student 9, D-	Student 10, D	Student 4, HD
03/99	17	12	14	37	16	20

	Student 12, C-	Student 16, C	Student 14, D-	Student 9, HD	Student 10, HD	Student 4, HD
06/01	49	49	41	41	37	37

The high number of nominal groups with classifying elements in the students' texts reinforces the observation made in Chapter Three that a classifying element in nominal groups, particularly in the Classifier^Thing configuration, is a distinctive feature of the technical terms in the discourse of child development and learning. Furthermore, the high number of nominal groups with classifying elements suggests that in their written texts the pre-service teachers are particularly concerned with ordering child development theories and approaches to teaching and learning. The increase in these elements in the students' third year texts reflects the students' increasing disciplinary knowledge and ability to order theories and teaching strategies.

Earlier it was argued that the implicit Macro-taxonomy of a student's text has a discourse organisational role as well as a role in mapping the student's current understanding of the field. The types of taxonomic relations established by classifying elements in the nominal group can also be seen to construct implicit taxonomies.

Classifiers in a nominal group function to indicate "a particular subclass of the thing in question" (Halliday 1994: 184). Therefore the classifying elements in the nominal groups imply other subclasses and taxonomic groupings. These types of taxonomic groupings are referred to as implicit Micro-taxonomies.

To show the extent of implicit taxonomies created through the classifying elements in the nominal groups, the implicit Micro-taxonomies in Student 4's third year text are shown diagrammatically in Figure 7.2. The taxonomies shown in Figure 7.2 are grouped as superordination taxonomies (*a* is a kind of *b*); however, this is only an interpretation and other taxonomic groupings are possible. To simplify the diagram, not all the taxonomic relations are shown, nor is a distinction made between technical and semi-technical taxonomies. The taxonomies are grouped into concepts, processes as phenomena, teaching strategies, theories and people.

The large number of implicit Micro-taxonomies evident in this student's text suggests that ordering and classifying phenomena, theories and approaches to teaching and learning is an important part of learning in the field of pre-service teaching. From the student's perspective classifying assists with 'mapping' disciplinary knowledge, while from the tutor's or lecturer's perspective, it shows that students are able to distinguish between different approaches and recognise the components and types of different phenomena.

i) **concepts**

motivation
- intrinsic motivation
- extrinsic motivation

(super-ordination)

behaviour
- communicative behaviour
- cooperative & supportive behaviour
- self-regulation

(super-ordination)

ii) **processes as phenomena**

learning (super-ordination)
- social learning
  - peer learning

thinking (super-ordination)
- divergent thinking
- convergent thinking
- creative thinking
- autonomous thinking

play (super-ordination)
- practice play
- symbolic play
- dramatic & sociodramatic play
- constructive play

iii) **teaching strategies**

teaching strategies (super-ordination)
- constructivist teaching strategies
- scaffolded instruction
  - teacher modelling
- divergent questioning
- problem based approach

iv) **theorists & theories**

educational theories
- learning style theories
- intelligence
  - Gardner's theory of Multiple Intelligences
- creativity
  - Czikszentmihalyi's theory of creativity
- behaviourists (behaviourism
  - Piaget
- social learning
  - Vygotsky

Figure 7.2 Reconstructed implicit Micro-taxonomies in student 4's 06/01 text

In the students' texts it is noticeable that in a number of the nominal groups which contain classifying information, the classifying information is arguably redundant. In the following examples the Participant can be adequately identified without the additional classifying information in the nominal group. The configuration of these nominal groups tends to be Classifier^Thing, or paratactic elaboration in the nominal group. Deictic information was likewise similarly redundant in a number of nominal groups. The arguably redundant information is in bold script.

Classifier^Thing

Behaviourist Watson [Student 14, 03/99, P+]

Paratactic expansion

James Mark Baldwin, an **American psychologist** [Student 16, 03/99, C-]
John Locke, a leading **British philosopher** [Student 16, 03/99, C-]
Ivan Pavlov (1849-1936), a **Russian scientist** [Student 9, 03/99, D-]
John B. Watson (1878-1958), an **American psychologist** [Student 9, 03/99, D-]
Barbara Burks, a respected **psychologist** [Student 4, 03/99, HD]
neo-Piagetians, Case and Fisher [Student 12, 06/01, C-]

Deictic^Thing^Qualifier

Sternberg and Lubart's investment theory of creativity [Student 12, 06/01, C-]
Sternberg's triarchic theory of intelligence [Student 16, 06/01, C]
Gardner's theory of multiple intelligences [Student 14, 06/01, D-; Student 9, 10 & 4, 06/01, HD]
Vygotksy's sociocultural theory [Student 9, 06/01, HD]
Piaget's theory of genetic epistemology [Student 10, 06/01, HD]
Vygotsky's zone of proximal intelligence [Student 10, 06/01, HD]
Czikszentmihalyi's theory of big C creativity [Student 4, 06/01, HD]

As the above examples show, this type of classifying information was present in both the high scoring as well as the lower scoring first and third year texts. Its presence raises the question whether it fulfils a function if it indeed is redundant information in the textual context. It is most likely that the classifying element fulfils one or more of the following functions. Firstly, that it has a knowledge 'display' function. In other words, it demonstrates to the marker that the student has correctly ordered the theory within a school of thought, as in the *Behaviourist Watson* example or with the originator of the theory as in the Deictic^Thing^Qualifier configurations such as *Piaget's theory of genetic epistemology*. Secondly, the classifying or deictic

information functions as an anchor, or cognitive hook, upon which the student can build his or her own semiotic map of disciplinary knowledge. The third function is to show the student's awareness of the constructedness of disciplinary knowledge. This aspect is taken up in another section of this chapter.

To conclude this discussion of technicality (defining) and technicality (ordering) an overview of technicality in the students' texts is provided in Table 7.5. This table shows the technical terms in the students' texts and details the number of technical terms for each text. The most striking result from this table is the increase in technicality between the first year and the third year texts. While the third year texts were approximately 500-1000 words longer than the third year texts, all the students at least doubled the amount of technical items in their texts. For example, Student 14 included 2 technical items in her first year text and 12 in her third year text. This finding is by no means a surprising one, as the first year texts were written within the students first weeks of study when the students were entering the disciplinary world of child development and teaching and learning. On the other hand, the third year texts were written after two and a half years of learning about child development theories and implications of those theories for teaching and learning. The findings however provide quantitative evidence that learning specialist knowledge involves learning technical terms and necessitates adopting those terms in the students' learning texts such as written assignments.

As with the previous findings on technicality there was little difference between the amount of technicality in the lower scoring texts and the higher scoring texts. The average number of technical items in the first year lower and high scoring texts was 3.3. The average number of technical items in the third year texts was 14.5 for the two lower scoring texts (Students 12 & 16), and 15 for the remaining four higher scoring texts. One noticeable finding however, was the absence of any technical terms in the highest scoring first year text, the text of Student 4. This text however is prominent in the following discussion of abstraction in the students' text.

Table 7.5 Distribution of technicality in the students' texts

	Student 12, P-	Student 16, C-	Student 14, P+	Student 9, D-	Student 10, D	Student 4, HD
03/99	nature nurture biological development cognitive development socioemotional (development) Ecological system theory	nature nurture	classical conditioning observational learning	cognitive development biological development sensorimotor stage preoperational stage concrete operational stage formal operations stage classical conditioning operant conditioning	classical conditioning operant conditioning	-
	Total = 6	Total = 2	Total = 2	Total = 8	Total = 2	Total = 0

	Student 12, C-	Student 16, C	Student 14, D-	Student 9, HD	Student 10, HD	Student 4, HD
06/01	adaptation KLA's pre-operational stage concrete operational stage formal operation stage Information Processing theory cognitive development attentional processing mental space (M-space) metacognition social learning zone of proximal development (ZPD) triarchic theory of intelligence theory of multiple intelligence investment theory of creativity intrinsic motivation Extrinsic motivation discovery learning self-actualisation	intrinsic motivation extrinsic motivation information processing theory investment theory store model (of information processing) cognitive development discovery learning metacognition zone of proximal development	cognitive development information processing theories theory of multiple intelligences self-efficing (sic) theory of intrinsic motivation zone of proximal development scaffolding reciprocal teaching cooperative learning discovery learning IQ scores intrinsic motivation extrinsically motivation	information processing self-directed learning intrinsic motivation extrinsic motivation maturation cognitive development discovery learning preoperational stage Key Learning Areas zone of proximal development metacognition triarchic model memory-analytic practical-contextual creative-synthetic multiple intelligences pedagogical practices curriculum	cognitive development theory of genetic epistemology stage theory zone of proximal development scaffolding information processing metacognition cognitive apprenticeship psychometric /IQ tests divergent thinking intrinsic motivation extrinsic motivation	autonomous thinking metacognition teacher modelling scaffolded instruction peer learning big C creativity little c creativity divergent questioning SCAMPER mnemonic zone of proximal development (ZPD) Ego-centric speech triarchic theory make-believe play practice play symbolic play dramatic & sociodramatic play constructive play play with rules
	Total = 20	Total = 9	Total = 12	Total = 18	Total = 12	Total = 18

7.3.3 Abstraction

In the discussion of the register variable field in the previous chapter on learner genres it was pointed out that the way in which the discourse of field is construed in texts depends on the choice of genre. In the students' expository genres the field of discourse was primarily abstract. Phenomena tended to be abstract entities rather than tangible concrete things. However, in the Micro-genres Exemplum and Empirical Account, the field was construed as a concrete one, in which the unfolding of a particular concrete event was related. In the twelve texts which are the focus of this current chapter, Empirical Accounts occurred in two of the lower scoring first year texts (Student 12 x 1; Student 14 x 3), and in two of the higher scoring first year texts (Student 9 x 2; Student 4 x 2). In other words, there was no distinction between higher and lower scoring texts in the distribution of Micro-genres which construed the field of discourse as a concrete one. In the third year texts Exemplums and Empirical Accounts were absent from these students' texts.

A more detailed picture of abstraction in the students' texts can be gained by considering the thing types from the network perspective of Figure 3.3 (Chapter Three). The results from the thing type analysis are collated in Figures 7.3.1 and Figures 7.3.2. The analysis for each student's text excerpt is included in the Appendix (Appendix E).

Av. LS. Av.HS*

concrete

specific ↘ *I, classroom, Vygotsky* $12^6, 16^7, 14^1, 9^2, 10^4, 4^6$,   (4.6)   (4.0)

generic ↘ *thinker, teachers,* $12^7, 16^{19}, 14^5, 9^4, 10^{15}, 4^3$,   (10.3) (7.3)

abstract

semiotic ↘ *fact, idea, theory* $12^2, 16^5, 14^3, 9^0, 10^3, 4^2$ (3.3)   (1.6)

generic ↘ *problem, culture, way* $12^5, 16^{15}, 14^6, 9^{16}, 10^{11}, 4^{19}$,   (8.6) (15.3)

technical ↘ *scaffolding, maturation* $12^0, 16^4, 14^0, 9^0, 10^3, 4^0$,   (1.3)   (1.0)

semi–technical ↘ *development,* $12^1, 16^8, 14^3, 9^5, 10^7, 4^0$,   (4.0)   (4.0)

metaphoric

processual ↘ *approach, control,* $12^8, 16^6, 14^1, 9^4, 10^7, 4^{10}$ (5.0)   (7.0)

quality ↘ *strengths, importance,* $12^1, 16^0, 14^0, 9^1, 10^0, 4^4$,   (0.3)   (1.6)

Figure 7.3.1 Distribution of thing types in the first year texts

Av. LS. Av.HS*

concrete

specific ↘ *I, classroom, Vygotsky* $12^9, 16^3, 14^1, 9^5, 10^9, 4^{10}$,   (6.0)   (6.2)

generic ↘ *thinker, teachers,* $12^9, 16^{15}, 14^{12}, 9^8, 10^{14}, 4^{15}$,   (12.0) (12.2)

abstract

semiotic ↘ *fact, idea, theory* $12^5, 16^1, 14^2, 9^3, 10^1, 4^1$ (3.0)   (1.7)

generic ↘ *problem, culture, way* $12^{10}, 16^{13}, 14^{17}, 9^{13}, 10^4, 4^{15}$,   (11.5) (12.2)

technical ↘ *scaffolding, maturation* $12^1, 16^4, 14^6, 9^7, 10^2, 4^0$ (2.5)   (3.7)

semi–technical ↘ *development,* $12^6, 16^3, 14^8, 9^5, 10^5, 4^2$,   (4.5)   (5.0)

metaphoric

processual ↘ *approach, control,* $12^6, 16^7, 14^9, 9^{12}, 10^8, 4^{12}$ (6.5)   (10.2)

quality ↘ *strengths, importance,* $12^0, 16^2, 14^0, 9^4, 10^4, 4^1$,   (1.0)   (2.2)

Figure 7.3.2 Distribution of thing types in the third year texts

*Av.LS, Av. LH = Average for lower scoring texts; Average for higher scoring texts

The results of the analysis of thing types show that while the discourse of child development and teaching and learning is predominantly abstract, it has a distinct concrete dimension. The concrete dimension of the discourse is due to the presence of specific human participants in the text as well as generic human participants. The specific human participants were theorists and researchers in the field as well as the first person *I*, which functioned to construe in the text the student/writer as a future teacher and to make judgements on the saliency of theories for classroom practice. Specific human participants appeared in all of the first year texts as well as the third year texts. Specific concrete objects, on the other hand, did not feature in the texts. There was little difference in the average distribution of (concrete) specific things between the lower scoring texts (4.6) and the higher scoring texts (4.0) in first year. This finding is also apparent in the third year results, although there was a slight increase in the average amount of specific things in the third year texts compared to the first year texts. That is, the average number of specific things in the lower scoring third year texts was 6.0 compared to 4.6 in the first year texts, while for the higher scoring texts the third year average was 6.2 compared to 4.0 in the first year higher scoring texts.

Generic human participants were another significant concrete aspect of the texts. Generic participants representing the institutional roles of the participants, such as *teachers, learners, students, testers, classes* and *educators*, were a distinctive feature of the both the first year and third year texts. Other generic human participants were 'knowledge makers', such as *theorists* and *researchers,* and the human participants who influenced children's learning and development such as *peers* and *parents.* Concrete generic objects were rare in the texts and featured either as figures of speech, such as in the simile *as a window to development; as tabula rasa,* or as lexical metaphors such as *tools, goals.* One exception was *classroom,* which featured in several of the third year texts. In particular, 'types of classrooms', for example *a classroom that is social, a classroom that challenges students etc.* were sub-headings in Student 4's High Distinction scoring third year text. In other words, *classroom* as a generic concrete thing functioned as a means of organising the student's text. Thing types such as *tools, goals* reinforce the necessity of including a continuum dimension

in the thing type network, as these terms can be considered both as a form of concrete object as well as an abstract entity.

As the results for generic (concrete) things show, the average number of generic (concrete) things in the texts was approximately double the average number of specific (concrete) things. This finding applies to the lower scoring first year texts (specific [concrete] 4.6: generic [concrete] 10.3), as well as the higher scoring texts in first year (specific [concrete] 4.0: generic [concrete] 7.3). A similar finding is evident in the third year lower scoring texts (specific [concrete] 6.0: generic [concrete] 12.0) and the third year higher scoring texts (specific [concrete] 6.2: generic [concrete] 12.2).

While concrete thing types were an intrinsic feature of the students' texts, abstract thing types occurred with a higher frequency. The results for the category of semiotic abstract thing types, that is terms for generic dimensions of meanings such as *idea* and *knowledge*, show that these thing types occurred in all the students' texts except Student 9's first year text (Figure 7.3.1). The most common terms in this category were *theories, concepts* and *ideas*. The category of generic abstract thing types contained the highest averages of the four sub-categories of abstract thing types. This category was a broad category and included a number of terms to do with research activities such as *studies, method, findings, evidence, results,* as well as terms to do classroom activities such as *activities* and *tasks*. It also included terms which can be broadly described as to do with analysis: that is, terms that refer to part-whole relations such as *type, aspect, element, component* and terms with an explanatory function such as *purpose, reason* and *way*. These abstract generic terms featured with greater frequency in the higher scoring first year texts compared to the lower scoring texts, that is, 15.3 in the higher scoring texts and 8.6 in the lower scoring texts. In the third year texts there was little difference between the two averages with 11.5 in the lower scoring texts and 12.2 in the higher scoring texts.

Technical thing types were not prominent in either the first or the third year texts, scoring the lowest average for any of the thing types. Also, there was little difference between the results for technical thing types between the higher and lower scoring

texts. Semi-technical thing types featured more frequently than technical things in the first and third year texts, yet again there was little difference between the averages scored for the higher and lower ranking texts. Examples of semi-technical thing types in the students' texts are the terms *development, learning, behaviours* and *intelligence.* The results for the metaphoric thing types show a slightly higher average for the higher scoring texts in both first year and third year. There is also an increase in occurrences of metaphoric thing types in the third year texts. Examples of processual metaphoric thing types are *contrasts, beliefs, influences,* while examples of quality metaphoric thing types are *differences, weaknesses* and *flexibility.* One noticeable result for occurrences of technical and semi technical thing types compared to metaphoric thing types was in the High Distinction scoring texts of Student 4. This student had the lowest average of technical and semi technical thing types in her first year text (zero items), yet the highest amount of metaphoric thing types (total 14). A similar finding was evident in her third year text with the lowest amount of technical and semi technical terms (2 items), yet the equal highest amount of processual metaphoric thing types (12 items). This finding is taken up in the following discussion of the results for thing types.

The total average number of specific and generic concrete things in the students' texts was considerably lower than the total number of abstract and metaphoric things in the texts. That is, the total average number of concrete things for the first year texts was 14.9 for the lower scoring texts, and 11.3 for the higher scoring texts. In contrast, the total average number of abstract and metaphoric things was 22.5 for the lower scoring texts, and 30.5 for the higher scoring texts. A similar contrast between concrete and abstract was evident in the third year texts. That is, the lower scoring concrete average was 18.0 with 18.4 for the higher scoring average, while the total average number for abstract and metaphoric items for the lower scoring texts was 29.0 and 35.0 for the higher scoring texts. In other words, in both the first and third year texts abstract and metaphoric things were more predominant than concrete things, with both the lower scoring and higher scoring third year texts showing a significant increase in the number of abstract and metaphoric items included in the texts.

The results for the analysis of thing types shown in Figures 7.3.1 and 7.3.2 allow several observations about the discourse of child development and teaching and learning to be made. Firstly, the discourse has a distinct concrete dimension. This concrete dimension is in part due to reference to specific theorists and researchers who have contributed to disciplinary knowledge. Key disciplinary theorists such as Vygotsky and Piaget are referred to in all the students' texts as are the authors of reference books and textbooks. This concrete 'human' element of the discourse of child development makes visible the constructed dimension of much disciplinary knowledge. That is, in the words of Tutor Five, *"knowledge is always the result of research"*, and that it comes from *"somewhere"*. The presence of theorists and commentators in the students' texts also attests to the students' growing awareness of the constructed nature of disciplinary knowledge.

Another feature that adds to the concrete dimension of the students' texts is the use of the first person pronoun. As was previously stated, *I* functioned in the students' texts to construe the student/writer as a future teacher. This feature of the learner texts shows that the students' construe themselves as participants in the field, engaging with theories and transferring theories to classroom contexts. This finding has implications for the ways in which tutors and learning skills advisors counsel students on tenor aspects of their assignments. This issue is taken up in a later section on engagement.

The findings for thing types also make possible an observation on the relation between abstraction and technicality. In Chapter Three in the discussion of abstraction and technicality it was pointed out that Martin (1993a, 1993b) distinguishes between the technicality of science and the abstraction of the humanities. The results for the thing types in the students' texts suggest that the discourse of child development and learning as it is instantiated in the students' texts is both technical and abstract. Although the technical terms as thing types are not a predominant feature of the texts, they are an intrinsic component of the texts. The only exception to this observation is Student 4's text, which construes the discourse through abstractions. It should also be reiterated, echoing Wignell (1998) that abstractions are implicated in the technical

terms of the discourse of child development, making the distinction between abstraction and technicality in this particular discourse further indistinct.

7.3.4 Reasoning and Explaining

A significant dimension of disciplinary learning is reasoning. Explanations of why, how, under what conditions etc. are intrinsic aspects of analysing and explaining phenomena from a disciplinary perspective. The analysis of reasoning in the students' texts focussed on causal relations of reason, result and purpose, and the manner relation of means (Halliday 1994). In their writing the students drew on a range of lexicogrammatical resources to show causal relations of reason, result, purpose and manner (means). These resources are elaborated below with examples.

CAUSE: REASON

i) *cohesive conjunction between clause complexes*:↘ therefore, hence

It is also important to develop to develop the students skills of generating possibilities and not just single solutions.
It is **therefore** vital for the teacher to provide opportunities for the children to think divergently... [Student 4, 06/01, HD, cl. 59-60]

ii) *conjunction between clauses in a clause complex (paratactic and hypotactic)*: ↘ so, for, because, as

Children are more active in their development
as they grow,
and **so** it is essential that education develops the child's ability to self-educate.
[Student 4, 06/01, HD, clauses 128-130]

This approach is promising
because it challenges students ... [Student 4, 06/01, HD, cl. 34-35]

iii) *preposition with a non-finite clause*: ↘ by, with

By suggesting there are seven forms of intelligence
I think, this is a way of including more children in to the intelligent category
[Student 16, 06/01, C, cl. 141-142]

iv)   *preposition+nominal group as Circumstance in the clause:*⊔ because of

because of this belief a teacher would provide stimulus for the child. [Student 12, 03/99, P, cl. 36]

v)   *nominal group as Participant in the clause:* ⊔ reason

The main **reason** [[that the controversy still exists]] ... [Student 10, 03/99, HD, cl. 92]

vi)   *rankshifted clause as Participant in the clause:*

The main reason [[that the controversy still exists]] is [[**because "researchers do not agree on how hereditary and environment influence intelligence and personality"**]]. [Student 10, 03/99, HD, cl. 92]

vii)   *process in the clause:* ⊔ means

In terms of the classroom, this means [[that learning must be developed in which students with different strengths are each able to shine]]. [Student 4, 06/01, HD, cl. 76]

CAUSE: RESULT

viii)   *preposition+nominal group as Circumstance in the clause:*⊔ as a result of, *due to*

this adaptation begins at birth **as the result of** natural biological development and experiences with the world [Student 9, 03/99, D-, cl. 27]

ix)   *process in the clause:*⊔ result in, cause, affect

Many theorists have examined these questions
and expressed different opinions on the issue,
which, with no doubt, will **result in** a more thorough understanding of child development. [Student 16, 03/99, C-, clauses 15-17]

x)   *nominal group as Participant in the clause:*⊔ effect, consequences

the strong **effect** [[that nurture has on the developing individual]] [Student 12, 03/99, P, cl. 68]

xi)   *embedded clause as Modifier in nominal group:*

an environment [[that is **affected** by the gender of the child]] [Student 12, 03/99, P, cl. 55]

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CAUSE: PURPOSE

xii) *preposition with a non-finite clause:*↘ (so as, in order) to

> **To** come to an understanding about this debate
> we must have a strong foundation of the terms nature and nurture [Student 12, 03/99, P, cl. 5-6]

MANNER: MEANS

xiii) *preposition with a non-finite clause:*↘ by, with, through

> As a teacher in relation to peer pressure and students, I need to assist students **by** training them with social skills [Student 12, 03/99, P, clauses 74-75]

xiv) *nominal group (Head) as Participant in the clause:*↘ way, method, approach

> the **way** [[we deal and interact with each other]] [Student 12, 03/99, P, cl. 19]

xv) *Modifier in the nominal group (Participant)*

> a specific example **of one way to enhance the classroom environment** [Student 14, 03/99, P+, cl. 104]

xvi) *rankshifted clause as Participant:*

> As well, explore [[**how this will effect my ideas and teaching methods...**]] [Student 9, 03/99, D-, cl. 4]

xvii) *preposition+nominal group as Circumstance:* by, with, through

> **With** enthusiasm and careful planning of the curriculum and **with** exciting materials... children will generally have a more positive attitude. [Student 14, 03/99, P+, cl. 74]

The results for the amount and ways in which reasoning and explaining were realised in the students' texts are shown in Figures 7.4.1 and 7.4.2. These figures show the total amount of instances of reasoning for each student's text as well as the averages for each type of reasoning for the lower scoring texts (Av. LS), and the higher scoring texts (Av. HS). Totals are also given for the average amount of reasoning in the lower scoring texts and in the higher scoring texts.

	STUDENTS	Av. LS.	Av.HS
reasonↃ *therefore, hence (Conj.)**	$12^1, 16^1, 14^0, \underline{9^2}, \underline{10^3}, \underline{4^2},$	(0.6)	(2.3)
reasonↃ *so, for, because (Conj.)**	$12^1, 16^2, 14^0, \underline{9^4}, \underline{10^5}, \underline{4^1},$	(1.0)	(3.3)
reasonↃ *by, with (non-finite cl.)*	$12^0, 16^1, 14^0, \underline{9^0}, \underline{10^0}, \underline{4^0}$	(0.3)	(0.0)
cause — reasonↃ *because of (Circum.)*	$12^1, 16^0, 14^0, \underline{9^0}, \underline{10^1}, \underline{4^0}$	(0.3)	(0.3)
reasonↃ *reason (n.g. Participant)*	$12^0, 16^0, 14^0, \underline{9^0}, \underline{10^1}, \underline{4^0},$	(0.0)	(0.3)
reasonↃ *rankshifted cl. as Part.*	$12^0, 16^0, 14^0, \underline{9^0}, \underline{10^1}, \underline{4^0}$	(0.0)	(0.3)
reason Ↄ *means (Process)*	$12^0, 16^0, 14^2, \underline{9^0}, \underline{10^1}, \underline{4^1}$	(0.6)	(0.6)
resultↃ *as a result of (Circum.)*	$12^{0.} 16^2, 14^0, \underline{9^1}, \underline{10^1}, \underline{4^4},$	(0.6)	(2.0)
resultↃ *result in, cause (Process)*	$12^6, 16^4, 14^0, \underline{9^1}, \underline{10^0}, \underline{4^3},$	(3.3)	(1.3)
cause — resultↃ *effect, (n.g. Participant)*	$12^6, 16^0, 14^0, \underline{9^2}, \underline{10^4}, \underline{4^2}$	(2.0)	(2.6)
resultↃ *(embedded cl. as Modifier)*	$12^3, 16^2, 14^0, \underline{9^3}, \underline{10^1}, \underline{4^0}$	(1.6)	(1.3)
cause — purposeↃ *prep. with. n.f. clause**	$12^2, 16^1, 14^1, \underline{9^7}, \underline{10^1}, \underline{4^1}$	(1.3)	(3.0)
meansↃ *by, with (non-finite cl.)*	$12^2, 16^0, 14^2, \underline{9^0}, \underline{10^1}, \underline{4^0},$	(1.3)	(0.3)
meansↃ *way, method (Participant)*	$12^5, 16^2, 14^0, \underline{9^4}, \underline{10^5}, \underline{4^0}$	(2.3)	(3.0)
manner — meansↃ *Modifier in n.g (Part.)*	$12^0, 16^0, 14^0, \underline{9^1}, \underline{10^1}, \underline{4^0}$	(0.0)	(0.6)
meansↃ *(rankshifted cl. as Part.)*	$12^0, 16^0, 14^3, \underline{9^1}, \underline{10^1}, \underline{4^1}$	(1.0)	(1.0)
meansↃ *by, with, through (Circ.)**	$12^0, 16^0, 14^5, \underline{9^0}, \underline{10^2}, \underline{4^1}$	(1.6)	(1.0)
TOTAL	$12^{27}, 16^{15}, 14^{13}, \underline{\mathbf{9^{26}}}, \underline{\mathbf{10^{29}}}, \underline{\mathbf{4^{16}}}$	(17.8)	(23.2)

Figure 7.4.1 Results for reasoning and explaining in the 1999 texts

The results for the first year texts (Figure 7.4.1) show that the higher scoring students included more reasoning in their texts on average than the lower scoring texts. The average amount of instances of reasoning in the higher scoring texts was 23.2 compared to 17.8 in the lower scoring texts. In the third year texts (Figure 7.4.2) there was a marked increase in the amount of reasoning both in the lower scoring texts and the higher scoring texts compared to the first year results. In the lower scoring texts

reasoning increased from 17.8 instances to 32.5, whereas in the higher scoring texts reasoning increased from 23.2 in first year to 43.7. While the length of the third year essays compared to the first year texts no doubt contributed to this increase, it needs to be taken into account that the first year essay was explicitly concerned with cause and effect relationships (*the influence of nature and nurture on child development*). In other words, the results for the first year texts were possibly higher than would have been expected with an essay topic less focussed on causality.

As Figures 7.4.1 and 7.4.2 show, the descriptions i) - xvii) of the various realisations of reasoning and explaining were used as the means to measure the amount and types of reasoning in the students' texts. The detail was retained in the results' figures in order to monitor any differences in distribution of congruent and incongruent construals of reasoning. Martin (for example, 1985) argues that the most congruent realisation of reasoning is through conjunctive relations. In other words the relation between semantics and grammar is natural, or congruent, when logical relations are realised conjunctively. The most congruent construals are indicated in the figures by asterisks (*).

The results for the first year texts (Figure 7.4.1) show that the students construed reasoning both congruently between clauses through conjunctive relations such as *therefore* and *because*, and incongruently within clauses with reasoning construed as Participant, Process or Circumstance. Both the lower scoring students and the higher scoring students utilised more congruent construals of reasoning (cause: reason) than incongruent ones. This finding was repeated in the third year results. However the construal of Manner: means in the first year texts was equally realised congruently and incongruently, while in the third year texts this relation was construed more frequently incongruently as a Participant in the clause (e.g. *the way...*). This finding applies to both the lower and higher scoring texts.

In terms of the students' learning through writing, the language of reasoning and explaining is particularly important for interpreting theories of child development and transferring those theories to the classroom. In the students' texts reasoning and

explaining featured in discussions of the causes of child development, the consequences for teaching practices, and the ways in which learning can be fostered in the classroom. The numerical results suggest that reasoning and explaining took on an increasingly significant role the further the students advanced in their studies.

	STUDENTS	Av. LS.	Av.HS
cause — reason→ therefore, hence (Conj.)*	$12^3, 16^3, 14^1, 9^8, 10^1, 4^2,$	(3.0)	(3.0)
reason→ so, for, because (Conj.)*	$12^9, 16^{10}, 14^{15}, 9^{10}, 10^{15}, 4^5,$	(8.5)	(13.7)
reason→ by, with (non-finite cl.)	$12^0, 16^2, 14^0, 9^0, 10^0, 4^0$	(1.0)	(0.0)
reason→ reason (n.g. Participant)	$12^0, 16^0, 14^0, 9^1, 10^0, 4^0,$	(0.0)	(0.2)
reason→ rankshifted cl. as Part.	$12^0, 16^0, 14^1, 9^1, 10^1, 4^0$	(0.0)	(0.7)
reason→ means (Process)	$12^1, 16^1, 14^0, 9^1, 10^1, 4^5$	(1.0)	(1.7)
cause — result→ as a result of (Circum.)	$12^{4,} 16^2, 14^0, 9^1, 10^1, 4^1,$	(3.0)	(0.7)
result→ result in, cause (Process)	$12^0, 16^0, 14^1, 9^0, 10^0, 4^3,$	(0.0)	(1.0)
result→ effect, (n.g. Participant)	$12^0, 16^1, 14^0, 9^1, 10^1, 4^2$	(0.5)	(1.0)
cause — purpose→ prep. with. n.f. clause*	$12^1, 16^0, 14^5, 9^6, 10^5, 4^5$	(0.5)	(5.2)
means→ by, with (non-finite cl.)	$12^0, 16^7, 14^3, 9^1, 10^5, 4^5,$	(3.5)	(3.5)
means→ way, method (Participant)	$12^8, 16^7, 14^3, 9^6, 10^8, 4^7$	(7.5)	(6.0)
manner — means→ Modifier in n.g (Part.)	$12^1, 16^0, 14^3, 9^1, 10^1, 4^1$	(0.5)	(1.5)
means→ (rankshifted cl. as Part.)	$12^2, 16^0, 14^1, 9^2, 10^4, 4^3$	(1.0)	(2.5)
means→ by, with, through (Circ.)*	$12^3, 16^2, 14^2, 9^2, 10^4, 4^4$	(2.5)	(3.0)
TOTAL $12^{32}, 16^{35}, 14^{35}, 9^{41}, 10^{48}, 4^{43}$		(32.5)	(43.9)

Figure 7.4.2 Results for reasoning and explaining in the 2001 texts

The numerical results for reasoning and explaining also suggest that there was little difference between the degrees of congruent and incongruent realisations of reasoning between the low scoring students and the high scoring students. Both the lower scoring students as well as the higher scoring students used the congruent conjunctions to

explicitly signal causality connecting clause complexes. Both sets of students, however, also implicitly coded reasoning inside the clause in the form of Participants, Processes and Circumstances. In terms of the students' learning through writing, the more implicit, metaphoric variant has a number of implications. Firstly, in terms of persuasive force of the argument, the argument is less negotiable as a nominal group or process than when it is explicitly coded between clause complexes (Halliday & Martin 1993). Burying reason in this way and making it less open to negotiation is a feature of adult expository writing (Martin 1985). Secondly, reasoning in the form of nominal groups such as *the reason* or *the way* has an important function in organising discourse. For example in Student 4's 2001 the student uses the *way* as Head in several nominal groups to introduce and keep track of various teaching strategies:

52. **The most effective ways of teaching these strategies** include teaching modelling, scaffolded instruction, peer learning in the zone of proximal development and autonomous, spontaneous learning and reflection (citation).
53. Many of these recommendations link directly to the supportive classroom [[encouraged by Vygotsky's theory]].

54. [[Encouraging creativity in the classroom]] is **another way of challenging students.**
55. While Czikszentmihalyi's theory of big C creativity has definite applications in the wider world (or rather its specialist domains)
56. I cannot see its applications to the classroom
57. Little c creativity, on the other hand, should be encouraged,
58. and this could be done through the choice and range of activities in the classroom.
59. It is also important [[to develop the students skill of generating possibilities and not just single solutions]].
60. It is therefore vital for the teacher [[to provide opportunities for children to think divergently,
61. which could mean adopting different questioning techniques...
62. **Another way [[to encourage creative thinking]]** is ...

The third implication is to do with relational clause grammar. In the above excerpt the nominal groups *the way...* are related to other phenomena through identifying relational clause grammar. In other words, more metaphoric realisations of reasoning allow the students to expand their meaning potential and extend their thinking and learning.

The final observation on reasoning and explaining concerns a configuration which shall be referred to as *this means that....* This configuration occurred with the most

frequency in Student 4's third year text, and in that text it appeared to have an interpretive as well as a summing up function:

A classroom that supports the students

70. A supportive classroom is one where students are recognised and valued as individuals with different strengths and weaknesses, different abilities, and different talents.
71. Howard Gardner's theory of Multiple Intelligences is particularly useful [[in thinking of a supportive classroom]].
72. Although it is not a learning styles theory (Vialle, 2001, Week 6 Lecture),
73. it does help for students to recognise the blend of intelligences which they possess.
74. it helps students and teachers to recognise each individual as intelligent in some way,
75. it does not place more value on one particular intelligence as compared to another.
76. In terms of the classroom, **this means** [[that learning must be developed in which students with different strengths are each able to shine.]]

The reference item *this* in the relational clause 76 refers anaphorically to the five preceding clauses describing the general applications of Gardner's theory of Multiple Intelligences, while the *that* part of the configuration introduces a rankshifted act clause functioning as a Participant. The process part of the configuration *means* has a strong interpretive function, linking the theory through a causal process to classroom practice. In other words the configuration *this means that* has both a summing up and interpretive function, assisting this student to do a considerable amount of analytical and interpretive work through the lexicogrammar.

7.3.5 Constructing Disciplinary Knowledge: The Role of Reporting

So far this account of disciplinary learning through writing has focussed on disciplinary learning processes mediated through writing which enabled the students to build up their own semiotic map of disciplinary knowledge. It has emphasised the cognitive dimension of learning rather than the social. The term social for the purposes of this thesis is interpreted to mean the role participants, texts and social context play in constructing and shaping disciplinary knowledge. It is to this aspect that the discussion now turns.

In the students' texts there were many instances where the explanations of phenomena were built up by reporting the beliefs and views of theorists in the field. Building up explanations in this way is similar to the discourse community's practice of drawing

on the explanations of others, as well as giving authority to knowledge claims by referring to published research. It can also be an indication of students' growing awareness of the constructed and contested nature of much disciplinary knowledge.

The students drew on a number of grammatical resources to report knowledge claims. To assist the discussion of the results these grammatical resources were grouped into the broad categories of human Participant i)-ii), or abstract and metaphorical Participant iii)-v). The grammatical resources realising reported knowledge claims with human Participants were: (i) Circumstantial elements of Angle, and (ii) projecting and non-projecting processes (mental and verbal) with specific human and generic human Participants. Construals with abstract or metaphorical Participants were: (iii) generic abstract Participants in relational clauses (includes passive voice constructions omitting the agent); (iv) as well as nominalisations of mental and cognitive processes. Reported knowledge claims were also realised through nominal groups configured as abstract semiotic Things with a specific human Deictic Pre-Modifier (v). This category includes Circumstantial elements of Angle with a semiotic abstraction as Circumstance. For example:

human Participants

i) According to Vygotsky
ii) Both Piaget and Vygotsky believed that;

abstract and metaphorical Participants

iii) research shows; nature is thought to be
iv) Piaget takes a different **view**; This **belief** in make-believe play...
v) Sternberg's triarchic theory shows; according to this theory

The instances of reporting for each text and their classifications according to the above categories are provided in Appendix G. The results for first year texts on reported knowledge claims are shown in Table 7.6.1 and the results for the third year texts are shown in Table 7.6.2.

Table 7.6.1 Results for reporting knowledge claims in the 1999 texts

Lexicogrammatical realisations		St. 12 P	St. 16, C-	St. 14, P+	St. 9, D-	St. 10, HD	St. 4, HD
i)	Circumstance of angle	4	0	0	0	0	0
ii)	Specific and generic human participants and reporting processes	5	11	2	4	9	3
iii)	Generic abstract participants	0	1	1	0	1	0
iv)	Nominalised mental or cognitive process	2	0	0	1	1	1
v)	Abstract semiotic things with human Deictic and mental or verbal process	1	1	0	4	1	0
	TOTAL	12	13	3	9	12	4

Table 7.6.2 Results for reporting knowledge claims in the students' 2001 texts

Lexicogrammatical realisations		St. 12 C-	St. 16, C	St. 14, D-	St. 9, HD	St. 10, HD	St. 4, HD
i)	Circumstance of angle	1	1	1	0	1	2
ii)	Specific and generic human participants and reporting processes	15	6	3	6	15	9
iii)	Generic abstract participants	1	0	0	2	0	0
iv)	Nominalised mental or cognitive process	4	7	3	1	5	3
v)	Abstract semiotic things with human Deictic and mental or verbal process	18	8	8	12	10	8
	TOTAL	39	22	15	21	31	22

As the results in Table 7.6.1 and Table 7.6.2 show, the lower scoring and higher scoring students drew on a range of lexicogrammatical resources to report the views and beliefs of theorists in the field. Students utilised congruent construals of reporting with a human Sensor or Sayer and mental or verbal process (e.g. *Piaget believed*). They also utilised more incongruent ones in which the mental or verbal process was nominalised (*Piaget's approach*). Furthermore, both sets of students construed the ideas and beliefs of theorists through abstract semiotic things such as *Gardners' theory*. As with the findings on reasoning, and technicality and abstraction, in the findings for reporting there were only marginal differences between the degrees of congruent and incongruent choices between the lower and higher scoring students. Similarly, a considerable increase in the amount of both congruent and incongruent choices was evident between the first and third year texts.

In terms of the students' learning through writing, the presence of reporting in all the students' texts suggests that reporting beliefs and views is intrinsic to disciplinary knowledge building in undergraduate primary teacher education. The presence of reporting also attests to the students' awareness of the constructed nature of disciplinary knowledge. That is, the congruent construals with their human Participants explicitly emphasise theorists' and empirical researchers' contribution to disciplinary knowledge (e.g. *Piaget believed, according to Vygotsky*). This is also the case with the metaphoric construals as many of these nominal groups retain the human Participant construed as a Deictic or Classifying element (e.g. *the Piagetian view*). The abstract semiotic construals (e.g. *principles, concepts, theories*) also mostly retained a human Participant in either the Pre or Post-Modifier of the nominal group. Indeed, the reporting of knowledge claims as established facts through fact-like reporting processes with generic abstract participants (e.g. *research shows*) was rare in this particular data set.

The results also suggest that students were aware to some degree of the contested nature of disciplinary knowledge. The choice of mental and verbal processes such as *believed, argued, acknowledged* and their corresponding nominalisations allow for the possibility that the views and beliefs the students were presenting would not be the explanations that the student would ultimately accept. That is, the choice of *belief*, or *view* allows for the possibility of competing theoretical perspectives. Furthermore, presenting theoretical perspectives as Participants allowed the student to link the perspective, through relational clause grammar to other perspectives. For example:

> Piaget's theories stand in direct contrast to the behaviourists [Student 10, 03/99, D, cl. 65]

> Guilford is one of the theorists [[supporting the psychometric view]] [Student 16, 03/99, C-, cl. 83]

In the students' texts there was ample evidence to suggest that the students were aware of the contested nature of much disciplinary knowledge. However, there was only a small amount of evidence in the texts to suggest that they understood the role of debate in contributing to new understandings and disciplinary

knowledge. For example in the Issue stage of Student 16's first year text, the student acknowledged the role of debate in furthering disciplinary knowledge (in bold):

12. So, how] is to be known [[which aspect of the controversy is more influential on a child's development?]]
13. Or perhaps there should be no controversy at all,
14. and both aspects should remain independent.
15. Many theorists have examined these questions
16. and expressed different opinions on the issue,
17. which, with no doubt, **will result in a more thorough understanding of child development.**

[Student 16, 03/99, C-]

However, in this student's concluding Position stage, the range of opinions on the causes of child development were seen to offer teachers a variety of approaches from which to choose, rather than to further understandings of child development:

92. Due to the many different views and theories on this topic, it allows each person to interpret the age old nature-nurture controversy from different angles.
[Student 16, 03/99, C-]

This finding echoes the findings from the students' interview data discussed in Chapter Four.

7.3.6 Engaging with Disciplinary Knowledge

The final learning process mediated through writing to be considered is students' engagement with aspects of disciplinary knowledge. Throughout the trainee teachers' degree the lecturers and tutors encouraged the students to make connections between theory and practice, to judge the saliency of theories, and to consider the implications for their own classroom.

The students' engagement with disciplinary knowledge was both explicit and implicit. One way in which the students' explicit engagement was realised textually was through the identification of themselves as teachers or future teachers. This was

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construed grammatically as a Circumstance of Role and first person pronoun as Participant or through a Circumstance of Location (i). This circumstantial information was often linked to statements of recommendations of what the students should or needed to do as teachers. These statements were realised through modalised relational and material processes with the first person pronoun as Participant (ii). A further explicit form of engagement was statements about the students' stance towards the saliency of theories and their applicability to classroom practice. These statements were mostly realised through mental or verbal projecting processes with the first person as Sayer or Senser. Stance statements also took the form of verbal processes functioning to agree or disagree with theoretical positions and evaluative relational attributive processes. Less congruent construals were relational processes with a nominalised mental process as Participant and rank-shifted mental processes as Post Modifiers in nominal groups (iii). A similar kind of explicit engagement was 'understanding'. This refers to the cognitive processes of reflecting and understanding that some students made explicit through projecting and non-projecting mental processes (iv).

Explicit realisations

i)   Identification realised through Circumstance of Role and first person pronoun as Participant

as a teacher, I...

Circumstance of Location with possessive pronoun as Deictic in nominal group
In **my** classroom...

ii)   Recommendations realised through modalulated processes with first person pronoun as Participant[1]

As a teacher.., **I need to** assist students by training them ...
As a teacher, **I need** to be careful [[not to influence children in the wrong way...]]
As teachers **we should** encompass the view of many of many of today's theorists

---

[1] Recommendations were sometimes extended clause complexes with circumstantial information of Manner. For analytical purposes each process functioning as a recommendation was counted as one instance of engagement. Non-finite circumstantial clauses of Manner were not included in the count.

iii) *Stance statements realised through a range of process types with first person pronoun as Participant*

(congruent construals)

I believe that a teacher must understand that the children's development is a result of their hereditary factors and the environment

As teachers we can influence children...

I am slightly critical of his notion of stages

I strongly disagree with Piaget

(less congruent construals)

my criticism of a strong logical, mathematical aspect of the theory

Another way [[that I **think** would be really good to motivate children on a topic]]

iv) *'Understanding' statements realised through projecting and non-projecting mental processes and relational processes with first person pronoun as Participant*

I have gained knowledge

The numerical results for the explicit instances of engaging with disciplinary knowledge are summarised in Tables 7.7.1 and 7.7.2. The results listing the instances of explicit disciplinary engagement for each student's text are provided in Appendix H.

Table 7.7.1 Results for instances of explicit engagement in the 1999 texts

Explicit forms of engagement 1999	St. 12 P	St. 16, C-	St. 14, P+	St. 9, D-	St. 10, HD	St. 4, HD
i) Identification (Circ. Role)	2	0	0	2	1	0
ii) Recommendations	2	0	0	3	2	0
iii) Stance	0	0	0	0	0	1
iv) Understanding	3	0	0	0	1	0
TOTAL	**7**	**0**	**0**	**5**	**4**	**1**

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Table 7.7.2 Results for instances of explicit engagement in the students' 2001 texts

Explicit forms of engagement 2001	St. 12 C-	St. 16, C	St. 14, D-	St. 9, HD	St. 10, HD	St. 4, HD
i) Identification (Circ. Role)	1	5	1	5	3	0
ii) Recommendations	1	1	0	2	0	0
iii) Stance	16	11	18	23	28	11
iv) Understanding	0	1	0	1	3	0
TOTAL	18	18	20	31	34	11

The results for explicit engagement show that a personal, subjective form of engagement is an intrinsic part of the undergraduate primary teachers' writing. Explicit engagement featured in four of the six first year texts and all of the third year texts. The third year results showed a marked increase in the amount of engagement in the students' texts compared to the first year texts. In the first year texts there was no specific area in which the students' engagement was concentrated. In the third year texts, however, the overwhelmingly predominant form of explicit engagement was stance as students made judgements about the saliency of theories and their applicability to the students' future teaching practices.

In addition to explicit engagement with disciplinary knowledge and practices, the students also engaged with disciplinary knowledge in more implicit ways. The implicit dimension of the students' engagement was due to the students' more incongruent lexicogrammatical choices. For example, in the implicit form of recommendations, passive voice constructions functioned to omit human agency in the recommendations. Furthermore, the recommendations of obligation and necessity were modulated through *should* (v), or realised incongruently as an Attribute in a relational clause (vi). Recommendations also featured as rank-shifted clauses functioning as Participants in relational clauses. In these relational clauses, the recommendation was often linked to a causal explanation, again realised incongruently as a nominal group (vii).

Implicit recommendations:

v)   *modulated expressions of obligation and necessity with abstract subject and passive voice*

Little c creativity, on the other hand, **should** be encouraged

vi)   *command construed incongruently as an Attribute*

It is also **important** to develop the students' skill of generating possibilities and just single solutions

It is therefore **vital** for the teacher to provide opportunities for children to think divergently.

vii)   *command construed incongruently as a rank-shifted act functioning as Participant in a relational clause or as Post Modifier in a nominal group*

Encouraging creativity in the classroom is another way of challenging students.

(*more congruent construal:* Teachers should encourage creativity in the classroom because it challenges students.)

Things **to consider** are group mixes and roles and responsibilities

(*more congruent construal:* Teachers should consider group mixes and roles and responsibilities.)

The students also made implicit judgements about the saliency of the theories and their applicability to the students' future teaching practices. These judgements were expressed impersonally in identifying clauses with either nominalisations or qualities as Participants, or abstract semiotic things as Participants with Epithet^Thing configurations (viii). Implicit stance statements were also realised through attributive clauses with an adjective as Attribute (ix). The analysis included any evaluative statements about the quality of a particular argument in the category of stance as a form of engagement (e.g. *This is critical to the nurture argument*).

Implicit stance:

viii)   *nominal groups with grammatical metaphor*
Big c creativity has **definite applications**

Watson and Bandura theories are **important issues**

ix)   *attributive relational clauses*
The modelling shown in Bandura's study is also **important** for teaching.

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As in the explicit forms of engagement students incorporated generalised statements of their own understanding about child development issues. The implicit construals of this form of engagement were attributive relational processes (ix).

Implicit 'understanding' statements:

x)   *attributive relational processes*
       it is **important** [[to construct our own belief and ideals ...]]

The numerical results for the implicit forms of disciplinary engagement are shown in Tables 7.8.1 and 7.8.2. The results detailing the instances of implicit disciplinary engagement for each student's text are provided in Appendix H.

Table 7.8.1 Results for instances of implicit engagement in the 1999 texts

Implicit forms of engagement 1999		St. 12 P	St. 16, C-	St. 14, P+	St. 9, D-	St. 10, HD	St. 4, HD
v)	Recommendation: modulated impersonal processes	0	1	0	3	3	0
vi)	Recommendations: as Attributes	2	1	1	0	0	1
vii)	Recommendations: as r.s. clauses as Participants etc.	0	0	0	0	0	0
viii)	Stance: nominal groups etc	0	0	3	0	1	2
ix)	Stance: as Attribute	0	1	0	1	0	1
x)	Understanding: Attribute etc.	1	1	0	0	1	0
	TOTAL	**3**	**4**	**4**	**4**	**5**	**4**

Table 7.8.2 Results for instances of implicit engagement in the 2001 texts

Implicit forms of engagement 2001		St. 12 C-	St. 16, C	St. 14, D-	St. 9, HD	St. 10, HD	St. 4, HD
v)	Recommendation: modulated impersonal processes	24	8	9	3	12	7
vi)	Recommendations: as Attributes	1	1	2	0	4	4
vii)	Recommendations: as r.s. clauses as Participants etc.	8	2	2	7	1	8
viii)	Stance: nominal groups etc	7	9	12	4	16	9
ix)	Stance: as Attribute	7	2	2	3	4	4
x)	Understanding: Attribute etc.	0	4	0	2	0	2
	TOTAL	**47**	**26**	**27**	**19**	**37**	**34**

The results for the third year 2001 texts show that implicit forms of engagement are likewise a substantial feature of the students' texts. All the students' included incongruent forms of recommending and evaluating statements about the saliency of theories and their applicability to classroom contexts. The most common form of incongruent recommendation was impersonal modulated processes, while the most common form of incongruent evaluation was metaphorical nominalised processes or qualities with Epithet^Thing configurations (e.g. *tremendous help*), or abstract semiotic Things with Epithet^Thing configurations (e.g. *an important concept*).

A comparison of the average amount of engagement for the lower scoring and higher scoring first and third year texts is shown in Table 7.9. This table shows the averages for both explicit and implicit forms of engagement.

Table 7.9 Average scores for explicit and implicit engagement

AVERAGES	Lower scoring texts	Higher scoring texts
1999 explicit engagement	2.3	3.3
1999 implicit engagement	3.6	4.3
2001 explicit engagement	18	24
2001 implicit engagement	26	29

As can be seen from Table 7.9 there was a substantial increase in the amount of both explicit and implicit engagement between the first and third year texts. This increase can in part be attributed to the increased length of the third year texts and to the third year assignment task, which required students to evaluate theories for classroom practice. The increase, however, reflects the disciplinary concern with linking theory to practice. At the outset of the students' studies, explicit and implicit forms of engagement featured in the students' texts, but they were a minor presence. By third year however, the students gained sufficient disciplinary knowledge in order to survey the field and make informed connections between theory and classroom practice. This finding echoes the findings from the previous chapter on genre, which argued that evaluating theories for classroom practice was such a significant feature of the students' texts that it was recognised in this study as a distinct schematic stage of the expository genres.

The results for the averages also show that both explicit and implicit forms of engagement were equally represented in both the lower scoring and the higher scoring students' texts. This finding suggests that both the lower scoring and higher scoring students chose to identify themselves explicitly as future teachers and make explicitly available their own evaluations of theories for classroom practice. The finding however also shows that all the students were able to mobilise the mechanism of grammatical metaphor to link, through relational clause grammar, theories with evaluations and applications, theories with evaluative explanations, and so on. In other words, all the students were able to expand their meaning potential by utilising the potential of relational clause grammar.

7.4   SUMMARY

This chapter has provided a clausal level examination of significant processes realised through language for disciplinary learning which feature in the students' written texts. The findings provide insights on the ways in which students learn disciplinary knowledge through writing as well as provide insights on the discourse of child development and teaching as it was instantiated in the students' texts. The results also provide comprehensive descriptions of the lexicogrammatical resources through which the students realise the processes of naming, defining, taxonomising, reasoning, reporting knowledge claims and engaging with disciplinary knowledge and practices.

The major findings for the ideational dimension of learning through writing can be summarised as follows. Naming and defining featured in the students' texts; however, it was not a distinctive feature of either the first or third year texts. The major difference between higher and lower scoring texts appeared to be that the lower scoring students were less successful in introducing technical terms to their texts. In terms of the students' disciplinary learning it was suggested that definitions have both a 'knowledge telling' function as well as the function of clarifying or reminding students about new disciplinary concepts. The section on definitions also demonstrated how greater awareness of the ways in which grammar construes definitions would have assisted the development of a lower scoring student's text as well as helped to

Thing types that differences between ideational meanings in the lower scoring and the higher scoring texts began to emerge. In general, the higher scoring students incorporated more abstract generic Thing types than their lower scoring colleagues. In particular, one High Distinction scoring student used abstract Thing types as explicit discourse organisational tools.

The findings for reasoning and explaining in the students' texts is another area in which differences between the lower scoring texts and higher scoring texts emerged. The higher scoring students incorporated more reasoning in their texts both in first and in third year. The findings also show that the lexicogrammatical choices for reasoning and explaining were wide ranging and incorporated congruent and incongruent construals. Both the lower scoring students and the higher scoring students made more congruent lexicogrammatical choices than incongruent ones when reasoning. For the pre-service teachers the language of reasoning and explaining was particularly important for interpreting theories of child development and transferring those theories to the classroom. The numerical results suggest that reasoning and explaining take on an increasingly significant role the further the students advance in their studies.

The section on reporting knowledge claims argued that reporting plays an important role in students' disciplinary learning through writing. Furthermore, it argued that the ways in which students report knowledge claims can provide insights on students' understanding of the constructed and contested nature of disciplinary knowledge. The final section on engagement showed that both explicit and implicit engagement featured in all the texts, and that there was a massive increase in the amount of engagement, particularly stance, in the third year texts.

The findings for engagement, together with similar findings for abstraction, reasoning and reporting processes suggest that in the field of undergraduate teacher education the disciplinary discourse as it was instantiated in the students' texts has a distinct congruent element. In other words this particular academic register cannot be accurately described as only impersonal and abstract. Rather, the teaching and learning discourse of teacher education contains concrete and personalised elements as well as

clarify her thinking. Grammatical metaphor was also implicated in assisting the student to distill information in order to move from specific instances to generalisations.

The findings for taxonomising (classifying) identified explicit technical taxonomies and implicit Macro and Micro-taxonomies. Explicit technical taxonomies occurred in the lower and higher scoring texts, yet were not a predominant feature of either the first or third year texts. This finding, together with the finding that definitions are similarly part of the students' texts but not a significant feature, show that neither the first or third year texts overtly focussed on 'retelling' the factual or established information provided in the students' textbooks.

It was argued that implicit Macro-taxonomies occur above the clause and function as a means of organising the discourse as well as ordering theories and approaches to learning. These implicit taxonomies have significant potential as a learning tool. In order to utilise this potential, however, lecturers and literacy specialists need to make these underlying taxonomies explicit to students. Through teaching strategies such as joint text analysis, students can be made aware that through their writing they are establishing their own Macro-taxonomy of disciplinary knowledge. This taxonomy is a dynamic one as the various branches no doubt will change through alteration and elaboration over the course of the students' studies. By establishing explicit connections between writing and learning both lecturers/tutors and learners can come to view writing at university as an ongoing knowledge building process, rather than a compartmentalised 'instance', which serves mainly a monitoring and assessment function.

The overall findings for technicality showed that there was a striking increase in the amount of technicality between the first year and the third year texts. This finding provides quantitative evidence that learning specialist knowledge involves learning technical terms and necessitates adopting those terms in the students' written texts. The findings for abstraction showed that learning disciplinary knowledge also involves coming to terms with the abstract dimension of the discourse. It was in the findings for

an impersonal, abstract dimension, a dimension which is generally considered more representative of academic discourses.

CHAPTER 8

DISCUSSION AND IMPLICATIONS

Two recurring themes throughout this thesis have been the nature of learning to mean in a specialist disciplinary context and the relation between disciplinary learning and writing. The earlier chapters of this thesis considered the influence of the social context on students' writing and the relation of the students' to that context, while the later chapters examined in detail disciplinary language learning processes that are mediated through writing as well as students' writing development. This final chapter draws together the findings from these themes and considers the implications of the overall findings for the purposes of teaching and learning. This chapter also considers the contributions this thesis makes to systemic theory and genre theory. The chapter concludes with a discussion of future research directions.

8.1   WRITING AND LEARNING IN A DISCIPLINARY AND INSTITUTIONAL CONTEXT

The major motivation for this thesis was to contribute to debates on tertiary student literacy by providing a more detailed understanding of the role writing plays in disciplinary learning. Instead of focussing on problems with students' writing such as text organisation, sentence construction and punctuation, the approach has been more functionally oriented concentrating on the way students use language in the written mode to get things done: to discuss, define, classify, reason and so on. Such an approach provides a foundation for the development of writing pedagogies that aim to expand students' meaning potential in the written mode.

This thesis has also taken the view that learning through writing is a socially mediated process. For this reason the study investigated the social context which influenced and shaped the students' learning through writing.

The findings from the disciplinary and institutional context showed that in the Faculty of Education which was the site of this study, the overlapping concepts of critical analysis, analysis and critical thinking were highly valued. In the context of primary teacher education, the term critical analysis appeared to function as a super-ordinate term to refer to analytical processes in writing. These processes include making connections between theory and classroom practice, drawing links between theories, evaluating theories and research, and considering implications of research and theories for the classroom.

The findings from the contextual component of the study also provided insights into the ways students learn to write in a disciplinary context. In this study, the tutors took an active role in the students' writing development by providing extensive written feedback on the students' assignments, making explicit the writing requirements, and to a limited extent scaffolding the writing tasks. The students were pro-active in seeking assistance from their peers and tutors. However it was noticeable that the two lower scoring students who participated in the interviews were the exception to this observation. Their reticence in seeking assistance was attributed to anxiety and a lack of confidence.

The tutors' written feedback on the students' assignments was also a factor in the students' socialisation into the discursive practices of the discipline, a finding which echoes those of Spinks (1998) in undergraduate psychology. In the context of this study, however, marker feedback only played a small role in inducting students to the discursive practices of the discipline. On the other hand, the students' introductory textbook, a site of pedagogic discourse, was seen to play a major role in shunting the students from commonsense understandings of child development and learning to more uncommonsense disciplinary ones.

This study drew on the concept of an academic discourse community in order to explore the relations and tensions between the students and the mature members of the discipline, their associated discourses and their perceptions of disciplinary knowledge. In the context of this study, it appears that the concept of an academic discourse community is to some extent a misnomer for the undergraduate education students. The tutors rarely framed the students' writing from the contextual perspective of the academic discourse community and the marker commentary only played a small role in inducting students' to the discipline's discursive practices. Furthermore, the apprenticeship metaphor was considered by the tutors as an inaccurate one to describe their interactions with the students' in order for the students to learn the specialist disciplinary ways of meaning. This finding provides qualitative research evidence in support of Berkenkotter's and Huckin's (1995) claim that the apprenticeship metaphor does not accurately describe the way undergraduate students experience disciplinary discourses. From the students' perspective, academic writing as a discursive practice was not well understood and there was also the impression that the students experienced the discourse as restrictive and prescriptive, echoing the findings of Ivanic (1997). Instead, the primary teacher education students were considered as consumers of research, and it was only in third year that one student identified students as researchers and reflective practitioners. For the pre-service teachers and tutors, the students' connection to the mature discourse community was much more in terms of the vocational dimension of an education discourse community (teaching) rather than to education academics and their textual practices.

The concept of an academic discourse community was also useful for examining perceptions of disciplinary knowledge. The dominant learner genres in the students' writing were Expositions, Discussions and Evaluative Accounts, genres whose social purposes are mainly argumentation and evaluation. In other words, through their writing students compared and evaluated theoretical perspectives and interpretations, processes which contributed to the students' perception of disciplinary knowledge as constructed and contested. The lexicogrammatical choices in the students' writing for reporting knowledge claims also suggested that the students had a strong sense of

disciplinary knowledge as constructed and contested. Furthermore, the findings for the tutor interviews showed that the tutors were concerned to highlight the constructed nature of much disciplinary knowledge. However, the results from the student interviews showed that there was little understanding of the role of debate in contributing to new disciplinary knowledge and new understandings. Disciplinary knowledge building practices were a source of frustration for the students:

But considering the fact that everybody [the theorists] is in conflict... [Student 6]

I still feel under the constraint of having to back up everything said with the opinion of an academic. [Student 4]

This thesis recommends that the notion of an academic discourse community as it is conceptualised in Figure 1 (Chapter 1) is a useful one for tertiary literacy practitioners and disciplinary specialists to adopt in order to provide students with a greater understanding of the social context in which they are writing. It would allow them to explore the ways in which context can shape and influence discursive practices. Starting with Bernstein's (1975) conception of disciplinary knowledge as hierarchically organised, tutors and literacy practitioners could assist students to have a greater understanding of disciplinary knowledge building practices and why discursive practices such as analysis, debate and argument are valued. Bernstein's notion of disciplinary knowledge as hierarchically organised would also assist students to distinguish the function and orientation to knowledge of the different disciplinary genres which the students encounter such as the undergraduate textbook and the research article.

This thesis also recommends that the concepts of apprenticeship and academic discourse community be used critically and with caution by researchers of students' tertiary writing. These concepts provide important starting points for researchers to consider the relation of students to the academic context in which they are writing. However, the differences between the types and purpose of writing in which the students and mature members of the community engage, and their relation to disciplinary knowledge building and research can be distinctive. In such cases it

becomes questionable whether students can be regarded in any sense as novice 'members' of the discourse community.

8.2   WRITING TO LEARN

The second major theme of this thesis was the relation of writing to disciplinary learning. At the level of genre, the findings showed that through the writing of Expositions, Discussions and Evaluative Accounts, the pre-service education students developed several thinking and learning processes. These included developing a logical argument based on evidence, engaging with recent research and assessing the implications of research and theories for the classroom. The findings also showed that Micro-genres played an important role in students' learning of disciplinary knowledge through writing. It was suggested that the presence of Micro-genres sandwiched between the various arguments in an expository structure functioned as textual learning bridges. In other words, descriptive genres such as the Taxonomic Report and Descriptive Report were a means through which the students reviewed and built up knowledge of the field within an Expository structure. Other illustrative genres, such as Exemplums and Empirical Accounts, were a means through which the students made links between theory and practice.

The investigation at clause level into the ideational meanings in the students' texts highlighted the ways in which students were learning disciplinary knowledge through writing. The processes of naming, defining, taxonomising, reasoning, reporting knowledge claims and engaging with disciplinary knowledge and practices were the main means through which the students built up their own semiotic map of the discipline. These semiotic maps included both a descriptive as well as an interpretive dimension, as learning through writing in the field of child development involved incorporating competing views and explanations, as well as the student's own interpretations, applications and so on. The findings also showed that grammatical metaphor played an important role in expanding students' meaning potential.

By investigating the relation between disciplinary writing and the learning of specialist knowledge this thesis has laid the groundwork for a linguistic theory of learning in disciplinary contexts focussing on the written mode. As such it extends systemically oriented understandings of language as a resource for thinking and learning in childhood and adolescence into the adult domain.

In addition to providing a comprehensive description of the range of lexicogrammatical resources the students drew on in their writing to realise ideational meanings, this thesis has also provided a description of the discourse of child development and teaching and learning as it was instantiated in the students' texts. The thesis also mapped the changes that occurred in the students' writing over the three year period of the students' undergraduate degree. The main changes were a considerable increase in the amount of technicality and engagement in the students' texts.

8.3   CONTRIBUTIONS TO GENRE THEORY AND SYSTEMIC FUNCTIONAL THEORY

One branch of investigation in systemic theory has been scientific discourse, which has informed understandings of the concepts of technicality and abstraction. This study's investigation into the discourse of child development, a discourse oriented towards the social sciences, has raised questions about the way in which technicality is defined in systemics, the status of abbreviations as technicality and the relations between abstraction and technicality.

Firstly, technicality is generally defined in systemic theory as expressions with a field specific meaning which imply specialist taxonomies and in which specialist meanings are distilled (for example, Martin 1993a; Wignell et. al 1993). In the educational discourse of child development and learning, a considerable number of the technical terms have abstractions as Thing and a classifying, technical element as Classifier in the constituent structure of the nominal group (e.g. *social learning*), a feature which echoes Wignell's (1998) findings on technicality in sociology. This

thesis argues for a broader view of distillation and technicality. In other words, terms which resist distillation by retaining classifying elements should be considered as technical, with the proviso that these elements are 'semantically loaded' from the perspective of the discipline. That is, the terms are unambiguously defined either in the text or inter-textually and exist in taxonomic relations to other phenomena. This thesis, following has also reconsidered the status of acronyms as technical terms. While the acronyms in the students' texts were abbreviatory rather than full lexicalisations (White 1998), some of these acronyms were reductions on the semantic stratum rather than on the expression plane. In other words, this thesis argues that in specialist discourses the status of acronyms as technical or non-technical terms needs to be considered on a case by case basis.

The final observation concerns the relation between abstraction and technicality. This thesis shares Derewianka's (1995) position that it is misleading to characterise specialist discourses as either abstract *or* technical (cf. Martin 1993a, 1993b). In the discourse of child development and teaching and learning a considerable number of the technical terms were abstractions formed through nominalisation. Furthermore, the thesis also recognised nominalisations such as *creativity* and *intelligence* as semi-technical terms as they were considered to be between the categories of technical terms, abstractions and metaphorical realisations. Martin's (1997) provisional network of thing types was adapted to include semi-technical abstractions, functioning as a category between technical and metaphoric terms. Another difference between the network adapted for this study and Martin's is that it makes the indeterminancy between the categories explicit by incorporating a continuum dimension to the network.

This thesis has also contributed to genre theory by identifying two learner genres. These are the Evaluative Account and Empirical Account. The thesis has also argued that in learning contexts Macro-genres such as Expositions and Discussions can include Micro-genres which function principally as textual learning bridges.

8.4 ISSUES ARISING FROM THIS STUDY

8.4.1 No Single Measure

During the course of this study, preliminary findings were presented at seminars and conference meetings. In these forums a recurring area of enquiry from participants was perceived differences between higher and lower scoring students. While differences between higher and lower scoring students did emerge in the analysis, it needs to be stressed that there was no single measure that differentiated the higher and lower scoring students. For example, in some texts discourse organisational problems no doubt contributed to lower marks, while in other texts register choices detracted from the students' textualisations. It also needs to be stressed that the reasons for students' low marks sometimes were due to non-linguistic considerations such as the failure of students to adopt the Faculty's preferred referencing conventions, errors in logic as well as incorrect content information. This finding should serve as an important reminder to tertiary literacy practitioners that successful writing is a multi-dimensional undertaking that involves considerations of context, genre and lexicogrammar as well as other numerous considerations such as disciplinary conventions, accuracy in reporting, synthesis of information and so on.

8.4.2 Methodological Considerations

The finding that there was no single measure that differentiated higher and lower scoring texts also has implications for methodologies for researching writing. A smaller sample than that which was selected for this study may have pointed to a smaller set of indicators which distinguished the less successful texts from the higher scoring ones. Similarly, from the perspective of genre a smaller sample may not have indicated the variety of Micro-genres functioning within the Macro-genre environment of the students' texts.

The integrated approach to researching writing adopted in this study was also a means of 'unpacking' valued discursive practices such as critical analysis and

considering how these practices were realised linguistically in the students' texts. The triangulation of the data was also a means of uncovering tensions in the findings. For example the student interviews revealed that despite the findings from the marker commentary that showed written feedback only attempted to socialise the students to the discursive practices in a small way, the students still experienced the discursive practices as prescriptive and restrictive.

8.4.3 Description and Analysis

Another issue arising from this study was the status of description in students' writing and its relation to critical analysis. While the overlapping concepts of analysis, critical analysis and critical thinking were identified as highly valued discursive practices in both the institutional and disciplinary context of this study, descriptive writing was regarded as having little value in the disciplinary context. The findings of the generic and lexicogrammatical analyses, however, showed that descriptive elements such as Descriptive Reports, definitions and reported knowledge claims were intrinsic to successful analytical writing and that description played an important role in students' learning through writing. This thesis cautions against tertiary literacy practitioners and subject lecturers explaining the concept of analytical writing as distinct from descriptive writing. It also argues that the discussion of critical analysis, and critical thinking in tertiary learning could benefit from a linguistic perspective on how critical analysis is realised in student writing. This could assist educators in demystifying for novice writers what critical analysis is.

A linguistic perspective of critical analysis in the writing of pre-service teachers is the focus of Woodward-Kron (2002).

8.5 FUTURE RESEARCH DIRECTIONS

To [Tutor's name]
In my last essay you wrote that you could not identify where I was
writing my own opinion. In this paper I have used Italic where I am
writing my own opinion. I hope this is acceptable.
[note attached to third year student's assignment]

[Tutor's written response]
I liked the way that you used Italic to highlight your own opinion,
while this is not generally acceptable, I think that it is an important
step towards learning how to indicate that you are expressing your
opinion.

The linguistic component of this thesis has concentrated on genre and ideational meanings in the students' texts in order to investigate the relation between writing and specialist learning in the disciplines. The detailed descriptions of the students' congruent and incongruent lexicogrammatical choices to construe reasoning, engagement, reporting and so on are a step towards understanding the way students learn to mean in disciplinary contexts. The descriptions can help educators to assist students with not only improving students' textualisations but to aid their learning through writing and expand their meaning potential. However, the study has only touched on the interpersonal and textual dimensions of learning to mean in a disciplinary context. As the findings from the interview data showed, considerable misunderstandings exist about the interpersonal dimension of disciplinary writing. This is also apparent in the above text extract. Furthermore, as with the concept of critical analysis, subject specialists struggle to make available to students accessible descriptions of how these types of meanings are realised in academic discourses. One recommendation for further research is therefore to expand the current study to include an investigation into the interpersonal and textual dimensions of disciplinary learning through writing. Such an investigation would aim to consider the pedagogical applications of the study, and make available accessible descriptions of the findings.

The major future challenge facing this research is addressing the pedagogical applications of the study's findings. Some of the students interviewed for this study could see little connection between the types of writing and learning the students were doing in their undergraduate education studies and their work in the classroom as future practitioners. The students were also at a loss to articulate the ways in which the valued writing practices of the discipline were realised in writing. In other words, knowledge about language and its role for learning remained at best implicit for the students and at worst misunderstood or neglected. In their future role as teachers, however, the education students will become more aware of the role of language in their own students' learning such as in the processes of naming and classifying, reasoning and so on. A long term goal and ambitious application for this study is to thematise and foreground the role of language in learning in pre-service teacher education. It is hoped that such a strategy would not only aid the students' writing and learning of specialist knowledge at university but also assist them in their future role as classroom practitioners.

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APPENDIX A

University of Wollongong

Office of Research

University of Wollongong
NSW 2522 Australia

CONDITIONAL APPROVAL
In reply please quote: SD:KM HE99/016
Further Information: Karen McRae (PH: 42214457)

Tel (02) 4221 3386
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International 61 2+
Email office_research@uow.edu.au

16 February 1999

http://www.uow.edu.au

Ms Robyn Woodward-Kron
46 Smith Street
Mereweather NSW 2291

Dear Ms Woodward-Kron,

I am pleased to advise that the following Human Research Ethics application has been conditionally approved.

Ethics Number:	HE99/016
Project Title:	Learning the Discourse of the Discipline
Name of Researchers:	Robyn Woodward-Kron Dr Beverly Derewianka
Clearance Date:	10 February 1999
Duration of Clearance:	9 February 2000

This approval is granted subject to the following conditions:

(i)   the data should be stored securely at the University of Wollongong in the Education Faculty

(ii) on the Consent Form for Tutors, change "Ethics Committee approval has been grant to collect student assignments" to "The Human Research Ethics Committee has reviewed my application to conduct this research...".

This certificate relates to the research protocol submitted in your original application of 5 February 1999. It will be necessary to inform the Committee of any changes to the research protocol and seek clearance in such an event.

Please note that experiments of long duration must be reviewed annually by the Committee and it will be necessary for you to apply for renewal of this application if experimentation is to continue beyond one year.

Dr S. Dodds
Chairperson
Human Research Ethics Committee

cc.   Dr B. Derewianka, Supervisor
        Dean, Education

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UNIVERSITY OF WOLLONGONG

STUDENT CONSENT FORM

Research Title: LEARNING THE DISCOURSE OF THE DISCIPLINE

Researcher's Name: Robyn Woodward-Kron

This research project is being conducted as part of a Ph.D supervised by Dr. Beverly Derewianka in the Faculty of Education at the University of Wollongong.

AIM OF THE PROJECT

This project investigates the development of your writing as Education students throughout your undergraduate degree. It aims to identify the nature of the 'writing apprenticeship' that you experience as you learn to write assignments as Education students. The data for the project will be undergraduate student assignments, and interviews with students. The results will inform the development of discipline specific learning/teaching resources and teaching methodologies across the degree program to assist students to learn the discourse of their discipline.

STUDENT INVOLVEMENT

Assignment collection: Thank you for agreeing to let me collect and copy your EDUF 111 assignments. Because my study is investigating how your writing develops over the three years of your Education degree as well as how you learn how to write in an academic style, it would be very helpful for me if I could talk to you about these issues.

Student interviews: If you are interested in talking with me about your development as a writer at university, I need to have your consent and your phone number so that I can arrange an interview time with you. The interviews will be about 15 minutes long and they will be taped on a cassette recorder. The interviews will take place in one of the rooms in the Faculty of Education. I would like to interview you (if possible) before your examinations begin. The interview will be investigating aspects such as the role reading plays in your development as a writer, and the role of your tutors' comments on your assignments. As with your written assignments, the interview will be given a code so that your identity is not revealed in the study nor in any publications that may result from it.

Your participation in this research is voluntary, and you are free to refuse to participate and you are free to withdraw from the research at any time. Your refusal to participate or withdrawal of consent will not influence assessment in your degree program. In accordance with university research procedures, all data will be stored in a locked filing cabinet.

If you have any questions about this research project please don't hesitate to contact me on (02) 4969 4579, or my supervisor Dr. Beverly Derewianka (02) 4221 3320. If you have any inquiries regarding the conduct of the research please contact the Secretary of the University of Wollongong Human Research Ethics Committee on (02) 42214457.

Feedback: Unfortunately, I will not be able to provide you with individual feedback on assignments, as this would affect the data for my study. However, the results of the study will be made available to the Faculty of Education and should benefit future Education students.

Consent: If you agree to participate, please sign the attached consent letter and place it in the attached envelope. The envelope should be returned to the FACULTY OF EDUCATION INFORMATION COUNTER IN BUILDING 23.

Thank you for your cooperation.

Research Title:

LEARNING THE DISCOURSE OF THE DISCIPLINE

I, ... (please print your name) consent to participate in the research conducted by Robyn Woodward-Kron as it has been described to me in the information sheet. I understand that my interview with Robyn Woodward-Kron will be used for analysis and I consent for the interview to be used in that manner.

Signed   Date

..../....../......

Participant's Phone No:........................

APPENDIX B: Sample student text showing clausal and schematic analysis

Student 4, 2001 (June), High Distinction

	MACRO SCHEMATIC STRUCTURE & Micro-schematic structure
EXPOSITION N.B. Macro-schematic structure is in bold and upper case, while the Micro-genres and their schematic structure is unbolded, but upper case for the Micro-genre and lower case for the schematic structure	
1. [[To analyse one's personal philosophy of teaching (or how to foster children's best thinking and learning)]] is a surprisingly difficult task.	**THESIS**
2. The goal of teaching must be [[to bring out the best in their students]],	
3. and [[to do this]] requires children's thinking and learning.	
4. [[How to bring out the best]] is a complex proposition with no shortage of possible answers –	
5. Absolutely everyone has an opinion!	
6. In addition to the many and varied theories of children's learning and children's thinking [[which come from academics across the globe]], there are the opinions of my parents, my practicum teachers and other professionals.	
7. There is also the considerable influence of my personal experiences –as a student teacher and a classroom helper, and as both a child and a student in primary and high schools.	
8. [[To create a defined or concentrated theory from this collection of research, opinions and experiences]] is a difficult but necessary process.	
9. The following thoughts are my philosophy at the present moment in time, as a student with five semesters experience of educational theory, and significantly less practical experience.	
10. I trust	
11. that this philosophy will be flexible enough [[to allow me to try new ideas, to incorporate those ideas that do work, and to reject those that don't]].	
12. However, as a general rule, I want my classroom	
13. to have certain conditions for all students –	
14. it should challenge them,	
15. support them,	
16. be social	
17. and (especially in the early grades) include play.	
A classroom that challenges the students	**ARGUMENT**
18. The behaviourists believed	
19. that the child was a passive recipient,	
20. who responds to stimuli	
21. and who repeated or ceased this response as a result of the reinforcement [[received]].	
22. Piaget takes a different view	
23. seeing the child as a solitary learner and discoverer (Verenikina, 1999, p. 34),	
24. who attempts to make sense of the world	
25. by comparing their own hypotheses to their experiences,	
26. and adjusting their hypotheses accordingly.	
27. Teaching principles [[based on this constructivist approach]] encourage children's exploration of their own thoughts and theories.	
28. The expectations of the child are increased,	
29. by requiring them to reach deeper levels of understanding (Waite-Stupiansky 1997).	
30. Constructivist teaching strategies must match the child's development level to the types of knowledge being taught,	
31. promote autonomous thinking,	
32. actively involve the learner,	
33. and lead to the development of increasingly more sophisticated levels of understanding and reasoning (Waite-Stupiansky, 1997, p. 26).	
34. This approach is promising	
35. because it challenges students	
36. at the same time as it lets them build on their curiosity about the world.	
37. This curiosity could then be applied to interest projects.	
38. Also, because children will be interested in their work,	
39. [[motivating them to make their best effort and challenge themselves]] will not be so difficult.	
40. The satisfaction of curiosity, or achievement of a sense of accomplishment (Lysaght, 2001, Week 9 Lecture) [Identifying] should be the primary method of intrinsic motivation.	
41. I do not believe, either	
42. that this idea of the lone scientist is necessarily divorced from the social interaction I feel is absolutely necessary for learning.	
43. I believe	
44. taking a scientific, exploratory approach to the learning of many concepts can work in harmony with social learning through the use of streamed groups, peer tutors, interest groups and work with older students.	

45.	Constructivist education places responsibility for learning directly into the students' hands.	ARGUMENT
46.	However, in assigning learners this responsibility for their own education,	
47.	teachers also take up the responsibility of ensuring that students have a knowledge of the tools and processes by which they can improve their own learning.	
48.	The skills taught in metacognition will then be of tremendous help.	
49.	Metacognition involves two main components: an awareness of our thought processes and an ability [[to control or regulate these processes]] (Miller, 1993; in Lysaght, 1999, p. 66).	
50.	It is important [[that students have knowledge of and experience with using metacognitive strategies to aid their learning.	
51.	Some examples of these strategies include highlighting, finding key points, summarising, note making and so on.	
52.	The most effective ways of teaching these strategies include teacher modelling, scaffolded instruction, peer learning in the zone of proximal development and autonomous, spontaneous learning and reflection (Schraw and Graham, 1997).	
53.	Many of these recommendations link directly to the supportive classroom [[encouraged by Vygotsky's theory]].	
54.	[[Encouraging creativity in the classroom]] is another way of challenging students.	IMPLICATIONS
55.	While Czikszentmihalyi's theory of big C creativity has definite applications in the wider world (or rather, its specialist domains)	
56.	I cannot see its applications to the classroom.	
57.	Little c creativity, on the other hand, should be encouraged,	
58.	and this could be done through the choice and range of activities in the classroom.	
59.	It is also important [[to develop the students skill of generating possibilities and not just single solutions.	
60.	It is therefore vital [[for the teacher to provide opportunities for children to think divergently]],	
61.	which could mean [[adopting different questioning techniques]], and [[using a model like Polette and Hamelin's (1980) and Dalton's (1985) Divergent Questioning (seen in Vialle, 2001, Week 12 Lecture)]].	
62.	Another way [[to encourage creative thinking]] is [[to use the SCAMPER mnemonic [[devised by Eberle]]]] (1971; seen in Vialle, 2001, Wk 12, lecture).	
63.	[[Using a problem-based approach]] is also an option,	
64.	because it encourages both divergent and convergent thinking in generating ideas, [[refining them]], and [[selecting an appropriate solution]] (Isaksen & Treffinger, 1992).	
65.	If these problems can be applied to relevant issues in the students' lives (as in Piaget's constructivist approach),	
66.	and the exercise can be applied with real purpose –	
67.	for example, by actually implementing the students' solution –	
68.	then their challenge will be rewarded.	
69.	Learning [Identifying] will have [Value] a purpose.	
	A classroom that supports the students	ARGUMENT
70.	A supportive classroom is one where students are recognised and valued as individuals with different strengths and weaknesses, different abilities, and different talents.	
71.	Howard Gardner's theory of Multiple Intelligences is particularly useful [[in thinking of a supportive classroom]].	
72.	Although it is not a learning styles theory (Vialle, 2001, Week 6 Lecture),	
73.	it does help for students to recognise the blend of intelligences which they possess.	
74.	it helps students and teachers to recognise each individual as intelligent in some way,	
75.	it does not place more value on one particular intelligence as compared to another.	
76.	In terms of the classroom, this means [[that learning must be developed in which students with different strengths are each able to shine.]]	
77.	The principles of the theory encourage students to use their preferred intelligences	
78.	when learning (web citaton.).	
79.	The theory then puts the onus back on teachers,	
80.	in that to be supportive,	
81.	they must plan activities [[to appeal to different intelligences]],	
82.	they should cater their assessments for multiple forms of intelligence (ibid).	
83.	[To adopt an approach of this sort]] means [[that all students have the opportunity to succeed, and that their achievements would be recognised]].	
84.	This would certainly make a supportive classroom.	
85.	The Zone of Proximal Development is another aspect of Vygotsky's theory [[that can be included in the principle of a supportive classroom.]]	ARGUMENT
86.	The Zone of Proximal Development (ZPD) is the gap between a child's level of unassisted performance, and their level of performance when an adult or a more capable peer supports them.	
87.	The supportive classroom also has as a central principle the idea of scaffolded instruction	
88.	providing support to students which is gradually lessened as they begin to become independent.	
89.	The idea of scaffolding has, in my observations of classrooms, been implemented by the careful planning of activities based on the students' prior experiences and knowledge, use of mixed-ability groups for many activities, structured group work, thoughtful pairings of students, using explicit	

demonstrations and increasing the difficulty of tasks.	
90. These ideas and strategies contribute to [Goal] a supportive classroom	
91. by ensuring students receive the help [[they need]].	
92. [[Using peer groups]] would additionally foster cooperative and supportive behaviours.	
A classroom that is social	ARGUMENT
93. Piaget held	
94. that learning came about through the child's attempts to understand the world, and their individual attempts to either assimilate or accommodate the information.	
95. Vygotsky, however, was a staunch believer [[that social interactions are crucial for development from the very beginning of a child's life]] (Verenikina, 1999, p. 34).	
96. The child's use of communicative behaviour and language is encouraged by the significant others in the child's life,	
97. and the child engages in the joint use of cultural tools.	
98. I think	
99. that Vygotsky's principles of social learning should apply in the classroom.	
100. A classroom [[where the maximum amount of learning can take place]] should be like a family, with the teacher and the child's peers becoming significant others.	
101. Students and the teacher should be involved in dialogue and the use of cultural tools, and joint exploration activities.	
102. According to Vygotsky, language is an essential tool in the child's development.	ARGUMENT
103. Initially, a child's language has a purely communicative function,	
104. but later, it becomes internalised,	
105. and acts as a tool for self-regulation and control (Verenikina, 1999).	
106. Although Piaget's view of egocentric speech seems valid	
107. (I have witnessed egocentric speech in action),	
108. I believe	
109. that language has a much greater purpose,	
110. and that Vygotsky's view of self-talk is closer to the truth.	
111. As a learner, << >> I often revert to self talk,	
112. mentally and verbally break it down into more manageable steps,	
113. which helps to regulate the way [[I perform the task]].	
114. << especially when confronted with a difficult task>>	
115. Therefore, I firmly believe in the use of language in the classroom,	
116. and will encourage this accordingly.	
117. Students should be able to talk to each other and to themselves if necessary,	
118. and these behaviours will be supported	
119. providing the talk is acting as a valid aid.	
120. To encourage this helpful talk,	
121. I will ensure I model it to students	
122. as we work through joint problems and exercises.	
123. Vygotsky also noted the central importance of the child in its own education.	ARGUMENT
124. The child is an active learner,	
125. who actively collaborates with their environment,	
126. affecting their social environment	
127. as their social environment affects them.	
128. Children are more active in their development	
129. as they grow,	
130. and so it is essential [[that education develops the child's ability to self-educate]] (Verenikina, 1999, p. 36).	
131. which again involves the strategies of cognition and metacognition.	
132. It is also important [[that <<given the mutual influence of the child and their social environment>>, teachers are flexible, and allow their teaching to be influenced by the learner, as they themselves influence the learner.]]	
133. This means [[that a teacher must cater for the varied needs of the students, and plan activities that will engage by using the children's interests and talents as a basis]].	
134. In this way, children will be challenged	
135. as well as being supported.	
136. The principles of Robert Sternberg's Triarchic Theory also place an emphasis on the social nature of thinking and learning.	ARGUMENT
137. His theory emphasises the links between intellectual performance, training, real-world behaviours and sociocultural relevance (web address).	
138. This puts the aim of education at a definite end-point.	
139. One aim of education must certainly be [[to equip children to be active participants in the community and the world,	
140. so Sternberg's theory encourages teachers to ensure the curriculum is relevant and appropriate.	
141. Education must be socially useful.	

	ARGUMENT
A classroom that encourages play	
142. Play has all too often been used to infer something rather trivial and non-serious, the polar extreme to work rather than, as in a child context, the essence of serious, concentrated thinking [citation].	
143. Play is [[an opportunity for children to work in their Zone of Proximal Development]].	
144. According to Vygotsky, in play <<>> they are a head taller than themselves. (Citation).	
145. << it is as though>>	
146. This means [[that children in play tend to act much older than they actually are, and display different capabilities in play situations as compared to when they perform these tasks as themselves]].	
147. Vygotsky, particularly values make-believe play as a developmental tool,	
148. and believes	
149. that it helps children to learn [[how they control their behaviour]].	
150. As play increases in sophistication	
151. it increases the ZPD	
152. by requiring more self-regulation, planning and memory (Verenikina, 1990, p. 50).	
153. This belief in make-believe play as an extension to a child's thinking capacity appears to be supported by Margaret Donaldson's experiments to rectify what she saw as the underestimation of children in Piagets' studies (Citation).	
154. Her findings suggest that children were able to perform better on a test when she asked them to imagine themselves or the problem in a particular, novel situation,	
155. and this supports play as an extremely important teaching/learning strategy.	
156. Piaget recognised	
157. that play provides the primary ways for young children to learn about the world and all of its social, physical, emotional and intellectual complexities (Citation)	
158. He described different categories of play	
159. these he matched with his stages of development.	
160. These are practice play, symbolic play, dramatic and sociodramatic play, constructive play and play with rules.	
161. Each of these types of play has a specific purpose in the child's development, from [[ascertaining the child's effect on the world (practice play)]], to [[exploring the relationships of people and things (dramatic, sociodramatic and constructive play)]].	
162. Play helps children in developing the ability to separate thoughts from actions and objects.	
163. Both Piaget and Vygotsky believed	
164. that play helped children to gain a better understanding of the society in which they lived.	
165. Vygotsky felt	
166. that make believe play helped children to perceive the roles of people in society, and the rules by which society is governed.	
167. Children get a sense of specific rules of behaviour, and adhere to these codes in play (Verenikina 1999).	
168. Piaget felt	
169. that play (especially that with negotiated rules) helped students to understand the conventions (negotiable, socially constructed rules) and morals (non-negotiable rules) of their society (citation).	
170. Play [Process] would therefore allow students to become prepared to be actively contributing members of society.	
171. This principle of including play in the curriculum is applicable to the early years of the school,	IMPLICATIONS
172. but can surely be applied to the upper years of school.	
173. The type of play [[engaged in]] would have to be adapted to ensure students participated,	
174. but could involve such things as writing scripts for drama performances, creating class games, modifying sports activities, creating computer programs and so on.	
175. I trust	REITERATION
176. that this philosophy of education is flexible	
177. to cater for the diverse needs of the students under my care,	
178. and to be modified when necessary, either by the inclusion of new ideas that work, or the rejection of ideas that don't.	
179. I also hope	
180. that this process of modification continues throughout my career,	
181. and that I remain [[open to change]].	
182. However, there are general principles that I believe form a solid base for successful teaching and learning experiences.	
183. These are [[that children should be challenged to achieve their best]], [[that they should be supported as they strive to achieve these goals]], [[that they should be engaged in dialogue with their peers and others in order to develop personally]], and [[that their should be programmed time for play and fun]].	

P.	STUDENT 1 (P+) DISCUSSION		STUDENT 2 (D) DISCUSSION		STUDENT 3 (C+) EXPOSITION		STUDENT 4 (HD) DISCUSSION	
	MICRO	MACRO	MICRO	MACRO	MICRO	MACRO	MICRO	MACRO
1	Issue Preview	ISSUE	Issue Preview	ISSUE	Definition Orientation	THESIS	Issue Preview	ISSUE
2	R. Point R. Elaboration	ARGUMENT *Implicit* + view	Point Elaboration	'ARGUMENT'	Orientation Preview Thesis		Point R. Elaboration Point	ARGUMENT + view
3	R. Point R. Elaboration	ARGUMENT + view	Point R. Elaboration	ARGUMENT + view	TAXONOMIC REPORT Classification	ARGUMENT *Implicit* + & - views	EMPIRICAL ACCOUNT Orientation	ARGUMENT *Implicit* + view
4	Point R. Elaboration	ARGUMENT - view	R. Elaboration		Description Of Parts Point		R. Experiment Rep. Findings Evaluation	ARGUMENT +
5	Point Elaboration	ARGUMENT +, - views	Counter Point R. Elaboration	ARGUMENT - view	Point Recommend.		Counter Point	COUNTER ARGUMENT -
6	Point Recommend. Point Elaboration Recommend. Point Summary R. Position	IMPLICATION "POSITION"	EMPIRICAL ACCOUNT Procedure Findings Evaluation	ARGUMENT + & - views	Description of Parts		EMPIRICAL ACCOUNT Orientation	ARGUMENT *Implicit* - view
7			R. Point R. Elaboration	ARGUMENT + & - VIEWS	Point R. Elaboration	ARGUMENT *Implicit* - view	Recount	
8			Point R. Elaboration Point	ARGUMENT + & - VIEWS	DES. REPORT Classification Explanation	ARGUMENT *Implicit* - view	Recount	
9			EMPIRICAL ACCOUNT Procedure Findings Evaluation	ARGUMENT - view	Description of Parts	ARGUMENT *Implicit* - view	Recount	
10			Position	POSITION	Point Elaboration Point	ARGUMENT - view	Findings	
11			Implications			IMPLICATION	Findings	
12			Summary Position		Counter Point	ARGUMENT + view	Evaluation	
13					Elaboration		Point Elaboration Point	ARGUMENT - view
14					R. Elaboration		Summary Position Recommend.	POSITION
15					Point Recommend.	IMPLICATION		
16					Point Recommend.	ARGUMENT + & - view		
17					Point Recommend.	IMPLICATION		
18					Summary Implication	REITERA-TION		

ABBREVIATIONS

R. Point	Reported Point	+ viewpoint	Perspective from similar viewpoint
R. Elaboration	Reported Elaboration	- viewpoint	Opposing viewpoint
Recommend.	Recommendation	Desc. Report. Th	Descriptive Report: Theory
Desc. Report	Descriptive Report	Point/ Eval.	Point; Evaluation
E. Account	Empirical Account	Orien./ Inc. /Int.	Orientation; Incident; Interpretation
R. Experiment	Recount of Experimental Procedure	Eval. Account	Evaluative Account
B. Statement	Belief Statement		

P.	STUDENT 5(C) DISCUSSION MICRO	MACRO	STUDENT 6 (D) EXPOSITION MICRO	MACRO	STUDENT 7 (HD) DISCUSSION MICRO	MACRO	STUDENT 8 (C) DISCUSSION MICRO	MACRO
1	Issue	ISSUE	Position Preview	THESIS	Issue Orientation Implications & Issue (linked	ISSUE	Issue	ISSUE
2	Point Elaboration	ARGUMENT - & + views	Point Elaboration Counter Point Implications	ARGUMENT	Point R. Elaboration Counter Point Elaboration Point	ARGUMENT + view ARGUMENT - view	Definition	
3	Definition		R. Point Elaboration Counter Point Implications	ARGUMENT	Point Elaboration Point	ARGUMENT - view	Elaboration	
4	Point R. Elaboration	ARGUMENT - view	R. Point R. Elaboration Counter Point Elaboration Implications	ARGUMENT	Point Elaboration Point Elaboration Point	ARGUMENT - view ARGUMENT - view	Definition	
5	Point Elaboration	ARGUMENT - view	R. Point Elaboration Implications	ARGUMENT	Point Elaboration Point Elaboration Recommend.	IMPLICATION FOR CLASSROOM	Point	"ARGUMENT" + & - views
6	Point Elaboration	ARGUMENT - view	DESCRIPT. REPORT Definition Belief Statement (x3) Point Implications	ARGUMENT Implicit ARGUMENT	Summary Position Implications/ Recommend.	POSITION	Elaboration	
7	Point Elaboration	ARGUMENT - view	Point Elaboration Implications	ARGUMENT			Elaboration	
8	Definition		Position Summary Implications	REITERATION			"Point"	
9	Point Elaboration	ARGUMENT + view					"Elaboration"	
10	Point Elaboration	ARGUMENT + view					Point Elaboration	"ARGUMENT" + & - views
11	Point Elaboration	ARGUMENT + view					"DESCRIPT. REPORT: Th.	
12	Point Elaboration	Point Elaboration					"DESCRIPT. REPORT: Th.	
13	Point Elaboration	IMPLICATION					"DESCRIPT. REPORT: Th.	
14	Point Elaboration	IMPLICATION					"DESCRIPT. REPORT: Th.	
15	Point Elaboration	IMPLICATION					"DESCRIPT. REPORT: Th.	
16	Point Elaboration	IMPLICATION					"DESCRIPT. REPORT: Th.	
17	Summary Position Implications	POSITION					"Point"	
18							"DESCRIPT. REPORT: Th.	
19							Point Elaboration	ARGUMENT + & - view
20							Point Elaboration	IMPLICATION
21							Position Summary	POSITION

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P.	STUDENT 9(D-) DISCUSSION MICRO	MACRO	STUDENT 10 (D) EXPOSITION MICRO	MACRO	STUDENT 11(P-) 'DISCUSSION' MICRO	MACRO	STUDENT 12 (P) DISCUSSION MICRO	MACRO
1	Issue Preview Implications	ISSUE	Position Preview Position	THESIS	Issue	ISSUE ⌐	Issue Preview	ISSUE ⌐
2	Point Elaboration	ARGUMENT + view	Point/ Elaborat. Implication	ARGUMENT	Definition		Definition	
3	DESCRIPT. REPORT: Th B. Statements Explanation	ARGUMENT *Implicit* + view	Point Elaboration	ARGUMENT	Definition		Definition	
4	TAXONOMIC REPORT: Th Classification Descr. Of Parts Point	ARGUMENT *Implicit* + view ARGUMENT + view	Point Elaboration Implication	ARGUMENT	TAXONOMIC REPORT: Classification		TAXONOMIC REPORT: Classification Desc. of Parts	
5	Point Elaboration	ARGUMENT + view	R. Point R. Elaboration	ARGUMENT	Description of Parts		Description of Parts	
6	Counter Point Elaboration	TRANSITION/ ARGUMENT - view	Counter Point Elaboration Implication R. Point Implication Elaboration	ARGUMENT ARGUMENT	Description of Parts		Description of Parts	
7	EMPIRICAL ACCOUNT Orientation Recount of Experiment Findings Evaluation	ARGUMENT *Implicit* - view	Point Elaboration Implications	ARGUMENT	TAXONOMIC REPORT: Classification Description of Parts		R. Point	ARGUMENT + & - views
8	E. ACCOUNT Orientation Recount of Experiment Findings Evaluation	ARGUMENT - ARGUMENT *Implicit* - view	Summary Implications for the Classroom	REITERATION	Point	* *not a point for either argument*	R. Point Elaboration	ARGUMENT + & - views
9	DESCRIPT. REPORT: Description Explanation Point	ARGUMENT - ARGUMENT *Implicit* - view			Elaboration		Point R. Elaboration	ARGUMENT + view
10	Point Elaboration	ARGUMENT - IMPLICATION FOR CLASS.			Point	ARGUMENT *Implicit* - view	Point ImplicationS DESCRIP. REPORT Description	ARGUMENT - view
11	Point Elaboration Recommend.	IMPLICATION FOR CLASS.			Elaboration Point			
12	Summary Position Implications	POSITION			DES.REPORT B. Statement x3	ARGUMENT *Implicit* + view	R. Point	ARGUMENT - view
13					R. Point	ARGUMENT - view	E. ACCOUNT Orientation R. Experiment Findings	ARGUMENT + & - views
14					Point	ARGUMENT - view	Evaluation/ Implications	IMPLICATION
15					TAXONOMIC REPORT: Classification Descr. Of Parts	ARGUMENT *Implicit* - view	Point Elaboration Implication/ Recommend.	ARGUMENT + & - views
16					DES. REPORT B. Statement Explanation Description	ARGUMENT *Implicit* - view	Position Implications	POSITION
17					Position	POSITION		

P.	STUDENT 13(HD) DISCUSSION		STUDENT 14 (P+) EXPOSITION		STUDENT 15(D DISCUSSION		STUDENT 16 (C-) DISCUSSION	
	MICRO	MACRO	MICRO	MACRO	MICRO	MACRO	MICRO	MACRO
1	Issue Preview	ISSUE	Position/ Preview	THESIS	Issue Preview Implications	ISSUE	Issue Definitions Issue Preview	ISSUE
2	Point Elaboration	ARGUMENT + & - view	Point Elaboration ImplicationS	ARGUMENT *Implicit*	Point Elaboration Point	ARGUMENT + view		
3	Point Elaboration	ARGUMENT - view	E. ACCOUNT Orientation R. Experiment Findings R. Evaluation	ARGUMENT *Implicit*	Point Counter Point Elaboration Point	ARGUMENT + & - views	Point Elaboration Point	ARGUMENT + & - views
4	Point Elaboration	ARGUMENT - view	E. ACCOUNT Orientation R. Experiment Findings Evaluation	ARGUMENT	Point Elaboration	ARGUMENT + & - views	Point R. Elaboration	ARGUMENT + view
5	Point Elaboration	ARGUMENT - view	Counter Point R. Elaboration	ARGUMENT	Point Elaboration Recommend. Elaboration	IMPLICATION FOR CLASS.	Counter Point Definition R. Elaboration	ARGUMENT - view
6	Point Elaboration	ARGUMENT - views	Point Elaboration	ARGUMENT	Summary Position	POSITION	Point Recommen- dations	IMPLICATION
7	Point Elaboration	ARGUMENT - views	E. ACCOUNT R. Experiment Findings Evaluation	ARGUMENT			"Position" "Implications"	"POSITION"
8	R. Point R. Elaboration	ARGUMENT – view	Point Elaboration/ Recommend.	IMPLICATION				
9	Point Elaboration	ARGUMENT – view-	Counter Point Elaboration	IMPLICATION				
10	Point Elaboration Implications	ARGUMENT – view	Point Elaboration	IMPLICATION				
11	Position Implications/ Recommend.	POSITION	Reiteration Summary	REITERATION				

P.	STUDENT 2 (HD) EXPOSITION		STUDENT 3 (C-) DISCUSSION		STUDENT 4 (HD) EXPOSITION		STUDENT 5 (C+) DISCUSSION	
	MICRO	MACRO	MICRO	MACRO	MICRO	MACRO	MICRO	MACRO
1	Position Preview	THESIS	Issue	ISSUE	Position Preview	THESIS	Issue	ISSUE
2	Point Elaboration	ARGUMENT	"Preview"				Point Elaboration	ARGUMENT viewpoint
3	Point Elaboration	ARGUMENT			Definition		Point Elaboration	ARGUMENT viewpoint
4	Counter Point Elaboration	ARGUMENT	Point	ARGUMENT	Definition		Elaboration	
5	Point Elaboration	ARGUMENT	Point	ARGUMENT viewpoint	Point Elaboration	ARGUMENT	"Point" Elaboration	ARGUMENT viewpoint
6	R. Point Elaboration Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT viewpoint	Point Elaboration	ARGUMENT	Counter Point Elaboration	TRANSITION/ ARGUMENT
7	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT viewpoint	TAXANOMIC REPORT Descr. of Parts Point	ARGUMENT	R. Point Elaboration	ARGUMENT viewpoint
8	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT viewpoint	DESCRIP. REPORT: Th.	ARGUMENT *Implicit*	R. Point Elaboration	ARGUMENT viewpoint
9	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT viewpoint	R. Point R. Elaboration	ARGUMENT	Point Elaboration	ARGUMENT viewpoint
10	Point Elaboration	ARGUMENT	R. Point Elaboration	ARGUMENT viewpoint	R. Point R. Elaboration	ARGUMENT	Point Elaboration	ARGUMENT viewpoint
11	Point Elaboration	ARGUMENT	R. Point Elaboration	ARGUMENT viewpoint	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT viewpoint
12	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT viewpoint	Counter Point	ARGUMENT	Point Elaboration	ARGUMENT viewpoint
13	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT viewpoint	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT viewpoint
14	Reiteration Summary	REITERATION	Point "Elaboration	ARGUMENT	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT viewpoint
15			Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT viewpoint
16			R. Point R. Elaboration	ARGUMENT	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT viewpoint
17			Point Elaboration Recommend.	IMPLICATIONS	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT viewpoint
18			R. Point Summary Recommend.	"POSITION"	Point Elaboration Point	ARGUMENT	Position	POSITION
19					Position Summary	REITERATION	Summary	

P.	STUDENT 6(C+) EXPOSITION		STUDENT 8 (F) "DISCUSSION"		STUDENT 9 (C) EXPOSITION		STUDENT 10 (D) EXPOSITION	
	MICRO	MACRO	MICRO	MACRO	MICRO	MACRO	MICRO	MACRO
1	Position	THESIS	"Preview"	"ISSUE"	Position Preview	Thesis	Position Preview	THESIS
2	Point Elaboration	ARGUMENT	"D. REPORT Description x3 "Point" Elaboration Point Point Point Point Elaboration "Point"	"ARGUMENT" viewpoint	Point Elaboration	ARGUMENT	Point R. Elaboration Point	ARGUMENT
3	Point Elaboration Point	ARGUMENT	"Point" Definition D. REPORT Description "Point" Elaboration Point	"ARGUMENT" viewpoint ARGUMENT	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT
4	Point Elaboration	ARGUMENT	Elaboration Point Elaboration Point	"ARGUMENT" ARGUMENT	Point Elaboration	ARGUMENT	R. Point Elaboration	ARGUMENT
5	Point Elaboration	ARGUMENT	Elaboration Recommend./ Implications	ARGUMENT	Point Elaboration.	ARGUMENT	Point Elaboration	ARGUMENT
6	Point Elaboration	ARGUMENT	Point Elaboration Recommend./ Implications	ARGUMENT	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT
7	Point Elaboration	ARGUMENT	Summary Implications "Position"	"POSITION"	Point R. Elaboration	ARGUMENT	Point Elaboration	ARGUMENT
8	Point/ Elab. Point	ARGUMENT			R. Point Elaboration	ARGUMENT	R. Point R. Elaboration	ARGUMENT
9	Point Elaboration	ARGUMENT			Point Counter Point Elaboration	ARGUMENT	Point R. Elaboration	ARGUMENT
10	Point Elaboration	ARGUMENT			Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT
11	Point Elaboration Point	ARGUMENT			R. Point Elaboration Counter R. Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT
12	Point Elaboration	ARGUMENT			Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT
13	Point Elaboration	ARGUMENT			Point	ARGUMENT	Counter Point Elaboration	ARGUMENT
14	Point Elaboration Implications/ Recommend. Counter Point Elaboration	ARGUMENT			Reiteration Summary	REITERATION	R. Point Recommend.	ARGUMENT
15	Summary Reiteration of Thesis	REITERATION					Point Elaboration	ARGUMENT
16							R. Point Elaboration	ARGUMENT
17							Point Elaboration	
18							Reiteration	REITERATION

P.	STUDENT 11(C) EXPOSITION		STUDENT 12 (C-) EXPOSITION		STUDENT 13 (D) EXPOSITION	
	MICRO	MACRO	MICRO	MACRO	MACRO	MICRO
1	Position	THESIS	Orientation	THESIS ⌐	Position/ Preview	THESIS
2	Point Elaboration	ARGUMENT	Thesis/Preview	⌐	Point Elaboration	ARGUMENT
3	Definition Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT	Point Elaboration Implications/ Recommend	ARGUMENT
4	R. Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT
5	Point Elaboration	ARGUMENT	R. Point R. Elaboration	ARGUMENT	Point Elaboration	ARGUMENT
6	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT	R. Point R. Elaboration	ARGUMENT
7	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT
8	**HISTORICAL ACCOUNT Orientation Recount of Events Deduction**	ARGUMENT *Implicit*	Point Elaboration	ARGUMENT	Point Elaboration Implications	ARGUMENT
9	**HISTORICAL ACCOUNT Orientation Recount of Events Deduction**	ARGUMENT *Implicit*	Point Elaboration	ARGUMENT	Point Elaboration Implications	ARGUMENT
10	Point Elaboration Point	ARGUMENT	Point Elaboration	ARGUMENT	Reiteration	REITERATION
11	R. Point Elaboration Point	ARGUMENT	Point Elaboration	ARGUMENT		
12	R. Point Counter Point	ARGUMENT	Point Elaboration	ARGUMENT		
13	Point R. Elaboration	ARGUMENT	Point Elaboration	ARGUMENT		
14	Reiteration Summary	REITERATION	Point Elaboration	ARGUMENT		
15			Point Elaboration	ARGUMENT		
16			Point Elaboration Point	ARGUMENT		
17			Point Elaboration	ARGUMENT		
18			Point Elaboration	ARGUMENT		
19			Point Elaboration	ARGUMENT		
20			R. Point Elaboration Point	ARGUMENT		
21			Point Elaboration	ARGUMENT		
22			Summary ⌐	REITERATION		
23						
24			⌐			

Appendix C: Chapter 6, Results for 2000: DISCUSSIONS & EXPOSITIONS. Schematic Structure. Page 4 of 4.

P.	STUDENT 14(C+) EXPOSITION		STUDENT 15 D+ EXPOSITION		STUDENT 16 (C+) DISCUSSION	
	MICRO	MACRO	MICRO	MACRO	MACRO	MICRO
1	Position	THESIS	Position Preview	THESIS	Issue Preview	ISSUE
2	Point Elaboration Point	ARGUMENT	Point Elaboration Point	ARGUMENT	Point Elaboration	ARGUMENT
3	Point Elaboration Point	ARGUMENT	Point Elaboration Point	ARGUMENT	HISTORICAL ACCOUNT Recount Deduction	ARGUMENT
4	Point Elaboration Point	ARGUMENT	Point Elaboration	ARGUMENT	Point Elaboration Point Elaboration	ARGUMENT viewpoint ARGUMENT
5	Point Elaboration Point	ARGUMENT	Point ⌐ Elaboration ⌐ Point ⌐	ARGUMENT	Counter Point Elaboration	ARGUMENT viewpoint
6	Point Elaboration Point Elaboration Point	ARGUMENT	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT viewpoint
7	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT viewpoint
8	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT	Point Elaboration	IMPLICATION FOR CLASS.
9	Point Elaboration	ARGUMENT	Point R. Elaboration	ARGUMENT	EVAL. ACCOUNT Summary Analysis	ARGUMENT *Implicit*
10	Point Elaboration	ARGUMENT	R. Point Elaboration	ARGUMENT	EVAL. ACCOUNT Summary Analysis	ARGUMENT *Implicit*
11	Point Elaboration	ARGUMENT	Summary Reiteration	SUMMARY	Point Elaboration	ARGUMENT viewpoint
12	Summary Reiteration	REITERATION			Position ⌐ Summary ⌐	POSITION
13					Position	

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P.	STUDENT 2 (D) EXPOSITION		STUDENT 3 (C+) DISCUSSION		STUDENT 4 (HD) EXPOSITION		STUDENT 5 (P+) DISCUSSION	
	MICRO	MACRO	MICRO	MACRO	MICRO	MACRO	MICRO	MACRO
1	Preview Position	THESIS	Implications	ISSUE ⌐	Orientation Position	THESIS	"Thesis"	"THESIS"
2	Point Elaboration	ARGUMENT	Issue Preview		R. Point R. Count. Point Implications	ARGUMENT	Point Elaboration	ARGUMENT
3	Counter Point Elaboration Implications	ARGUMENT	Point Elaboration	ARGUMENT viewpoint	Point C. Point Elaboration/Imp Point	ARGUMENT	Point /Elab. EXEMPLUM Orien./Incident Interpretation	ARGUMENT
4	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT viewpoint	Point/ Elab. Point/Elaborat.	IMPLICATION	Point/ Elab. Counter Point	ARGUMENT
5	Point Elaboration Implications	IMPLICATION FOR CLASSROOM	Point Elaboration Implications	ARGUMENT viewpoint	Definition Point/ Elaborat. Implications	ARGUMENT	Point/ Elab. EXEMPLUM Orien./Incident	ARGUMENT
6	Point/ Elab. Implications	ARGUMENT	Point/ Elab. Implications	ARGUMENT viewpoint	Point Elaboration	ARGUMENT	Point Elaboration	ARGUMENT
7	Point Elaboration	IMPLICATION	Point Elaboration	ARGUMENT viewpoint	Point /Elabor. Implications	ARGUMENT	Point/ Elab. Counter P./Elab.	ARGUMENT
8	Point Elaboration	IMPLICATION	Point Elaboration/Imp	ARGUMENT viewpoint	Point/ Elab. Implictations	ARGUMENT	Point/ Elaborat. Implications	ARGUMENT
9	R. Point R. Elaboration	IMPLICATION	Point Elaboration/Imp	ARGUMENT viewpoint	R. Point/ Elab. Implications	ARGUMENT	Point EXEMPLUM Orien./Inc./Int.	IMPLICATION
10	EXEMPLUM Orien./Incident Interpretation	ARGUMENT	Point/ Elab. Counter Point Elaborat./Imp.	ARGUMENT viewpoint	Point Elaboration Point	ARGUMENT	Point Elaboration	ARGUMENT
11	R. Point Elaboration	ARGUMENT	R. Point Elaboration	ARGUMENT viewpoint	Point/ Elabor. Implications	ARGUMENT	Point/ Elabor. EXEMPLUM Orien/ Incident Interpretation	ARGUMENT
12	Point Elaboration	ARGUMENT	Point Elaboration/Imp	ARGUMENT viewpoint	R. Point R. Elaboration	ARGUMENT	Point Elaboration	ARGUMENT
13	Point Elaboration	IMPLICATION	Point Elaboration/Imp	ARGUMENT viewpoint	R. Point Elaborat./ Point	ARGUMENT	Point/ Elab. Point/ Elab.	ARGUMENT
14	Point Elaboration	IMPLICATION	Point Elaboration/Imp	ARGUMENT	Reiteration Summary	REITERATION	Point Elaboration	ARGUMENT
15	Point Elaboration	IMPLICATION	Point Elaboration/Imp	ARGUMENT			Point/ Elab. Implications	ARGUMENT
16	Point Elaboration	IMPLICATION	Point Elaboration/Imp	ARGUMENT			Point/ Elab. Implications	ARGUMENT
17	Point Elaboration/Imp	ARGUMENT	Position	POSITION			Point. Elab. EXEMPLUM Orien/ Incident Interpretation	ARGUMENT
18	R. Point Elaboration/Imp	ARGUMENT					Point Implications	ARGUMENT
19	Point R. Elaboration	ARGUMENT					Point/ Elab. EXEMPLUM Orien/ Incident Interpretation	ARGUMENT
20	Point/ Elab.	IMPLICATION					Point/ Elab	ARGUMENT
21	Point / Elab.	IMPLICATION					REITERATION	REITERATION
22	R. Point Implications R. Elaboration	ARGUMENT						
23	Point/ Elab.	ARGUMENT						
24	Point/ Elab.	IMPLICATION						
25	Point Elaboration/Imp	ARGUMENT						
26	Counter Point Elaboration/Imp	ARGUMENT						
27	R. Point Elaboration/Imp	ARGUMENT						
28	Reiteration	REITERATION						

#	STUDENT 6(HD) EXPOSITION		STUDENT 8 (C-) DISCUSSION		STUDENT 9 (HD) DISCUSSION		STUDENT 10 HD DISCUSSION	
	MICRO	MACRO	MICRO	MACRO	MICRO	MACRO	MICRO	MACRO
	Orientation Pos./ Preview Definition	THESIS	Thesis "Preview" Point/ Elab. EXEMPLUM Incident/Inter	"THESIS" ARGUMENT	Issue Preview Point Elaboration	ISSUE ARGUMENT	Issue Preview	ISSUE
	R. Point/ Elab Implications	ARGUMENT	Point Elaboration	ARGUMENT	Point Elaboration	IMPLICATION FOR CLASS	Point/ C. Point Implications	ARGUMENT viewpoint
	Point/ Elab. Implications	ARGUMENT	Point/ Elab. Implications	ARGUMENT	Point/ Elab. C. Point/ Elab.	ARGUMENT	R. Point C. Point/ Elab.	ARGUMENT viewpoint
	Point Counter Point	IMPLICATION	Point Counter Point	ARGUMENT	Point/ Elab. Implications.	ARGUMENT	R. Point C. Point/ Impl.	ARGUMENT viewpoint
	Point Elaboration	ARGUMENT	Point/ Elab. EXEMPLUM Incident/Inter	ARGUMENT	Point Elaboration	ARGUMENT	Point Elaboration	IMPLICATION
7	Reported Point Elaboration	ARGUMENT	Point TAX REPORT Classification Descr. of Parts Point/ Elab.	ARGUMENT	Point Elaboration	IMPLICATION FOR CLASSROOM	R. Point/ Elab. Implications	ARGUMENT viewpoint
8	Point/ Elab. Implications	ARGUMENT	Point/ Elab. Implications	ARGUMENT	Point Elaboration	IMPLICATION FOR CLASS	Point/ Elab. Implications	ARGUMENT viewpoint
9	Point/ Elab. Implic. /Point	ARGUMENT	Point/ Elab. Implications	ARGUMENT	Point Elaboration	IMPLICATION FOR CLASS	R. Point/ Elab. Counter Point	ARGUMENT
10	Point Elaboration Counter Point Elaboration	ARGUMENT	Point/ Elab. TAX REPORT Classification Desc.. of Parts Point/ Elab. EXEMPLUM Incident/ Inter.	ARGUMENT	Point Elaboration	IMPLICATION FOR CLASS	Point Elaboration Point Implication	ARGUMENT viewpoint
11	Point Point/ Elab.	ARGUMENT	Point/ Elab. Point/ Elab. Impl. Point	ARGUMENT	Counter Point	ARGUMENT	Point Elaboration	IMPLICATION
12	Point/ Implicat.	ARGUMENT	Point/ Elab/ Imp	ARGUMENT	Point/ Elab.	ARGUMENT	Point/ C. Point/ Elab.	IMPLICATION
13	Point/ Elab.	ARGUMENT	Point/ Elab.	ARGUMENT	Point/ Elab.	IMPLICATION	Point/ Elab.	IMPLICATION
14	Point Elaboration	ARGUMENT	Point/ Implic. Point	ARGUMENT	Point/ Elab. Implication	ARGUMENT	Point/ Elab. Implications	IMPLICATION
15	Point/ Elab.	ARGUMENT	Point/Elab.	ARGUMENT	Point/ Elab.	IMPLICATION	Point/ Elab.	IMPLICATION
16	Point/ Elab. Implications	ARGUMENT	Point/Elab. Point/ Elab. Implications	ARGUMENT	Point Elaboration Implications	ARGUMENT Viewpoint	Point Elaboration	IMPLICATION
17	Point/ Elab. Implications	ARGUMENT	Summary Reiteration	REITERATION	Point/ Elab. Elaboration	IMPLICATION	Point Elaboration	ARGUMENT viewpoint
18	Point/ Elab. Point/ Elab.	IMPLICATION			Point/ Elab. Implications	IMPLICATION	Counter Point Elaboration	ARGUMENT
19	Point/ Elab.	ARGUMENT			Point C. Point/ Elab.	ARGUMENT	Point Point/ Implicat.	ARGUMENT viewpoint
20	Point/ Elab. Recommend.	IMPLICATION			Point/ Elab. Point	IMPLICATION FOR CLASS	Point/Elab. Implications	ARGUMENT viewpoint
21	Reiteration	REITERATION			Summ/ Position	POSITION	Point/Elab/Imp	IMPLICATION
22							Point/ R. Elab. Point/Elab.	ARGUMENT viewpoint
23							Point/ Elab. C. Point/Elab.	ARGUMENT viewpoint
24							Point/Elab.	ARGUMENT viewpoint
25							R. Point/ Elab. Point	ARGUMENT viewpoint
26							Point/Elab/Imps	ARGUMENT
27							Point/ Elab/Imp	ARGUMENT
28							Point/Point/Elab	ARGUMENT
29							Point/Elab/	IMPLICATION
30							Summary	POSITION
31							Position	

P.	STUDENT 11(C) EXPOSITION		STUDENT 12 (C-) DISCUSSION		STUDENT 13 (C-) DISCUSSION	
	MICRO	MACRO	MICRO	MACRO	MACRO	MICRO
1	Definition Pos. /Preview	THESIS	Issue Preview	ISSUE	Issue Preview	ISSUE
2	Point/ Elab. EXPLANA-TION Procedures	ARGUMENT	Point R. Elaboration Implications	ARGUMENT viewpoint	⌉	
3	Point/ Elab. Implications	ARGUMENT	Point/ Elab. Implication	ARGUMENT	Point Elaboration	ARGUMENT viewpoint
4	Point/ Elab. Counter Point Elab. /Point	ARGUMENT	Point Elaboration	IMPLICATION	DES. REPORT Theory	
5	Point/ Elabor. Implications	ARGUMENT	Point/ Elab. Point	IMPLICATION	DES. REPORT Theory Descr. of Parts	
6	Point/ Imp.	ARGUMENT	Elaboration		Point Point	"ARGUMENT" viewpoint
7	Point ⌉ R. Elaboration	ARGUMENT	Point Elaboration	IMPLICATION	Point Elaboration	ARGUMENT
8	Elaboration ⌋	ARGUMENT	Point/ Elab.	IMPLICATION	Point/ Elab. Point	ARGUMENT viewpoint
9	Point/ Elab.	ARGUMENT	Transition	TRANSITION	Point/ Elab.	ARGUMENT
10	Point/ Elab. Implications	ARGUMENT	Point/ Elab. Implications	ARGUMENT viewpoint	Point/ Elab Implications	ARGUMENT viewpoint
11	Point/ Elab. Implications	ARGUMENT	R. Point R. Elaboration	ARGUMENT viewpoint	R. Point R. Elaboration	ARGUMENT
12	Point/ Elab.	ARGUMENT	Point/ Elab. R. Point/R. Elab	IMPLICATION	R. Point Elaboration	ARGUMENT viewpoint
13	Point Elaboration	ARGUMENT	Point Rec./Elaborat.	IMPLICATION	Point	ARGUMENT
14	Point/ Elab.	IMPLICATION	Point/ Elab.	ARGUMENT	Point/ Elaborat.	ARGUMENT
15	Point/ C. Point Elaboration	IMPLICATION	Point/ C. Point Elaboration	ARGUMENT viewpoint	Point/ Elaborat.	ARGUMENT viewpoint
16	Point/ Elab.	ARGUMENT	Point/ Elab. Implications	ARGUMENT viewpoint	EXPLANA-TION	ARGUMENT implicit
17	Point/ Elab.	IMPLICATION	Point/ Elab. Implications	ARGUMENT viewpoint	Point Implications	ARGUMENT
18	Position	POSITION	Point/ Elab.	IMPLICATION	TAX. REPORT	
19			Point/ Elab.	IMPLICATION	Point/ Elaborat.	IMPLICATION
20			Point/ Elab.	IMPLICATION	Point/Elab/Point	IMPLICATION
21			Point/ Elab.	ARGUMENT	Point/Elab./Imp.	ARGUMENT
22			Point/ Elab. Implications	ARGUMENT viewpoint	TAXONOMIC REPORT Desc. of Parts	
23			Point/ Elab./Imp	ARGUMENT	Desc. of Parts	
24			Point/ Elab/Imp	ARGUMENT	Point/ Elab.	IMPLICATION
25			Point/Elab/	ARGUMENT	Point/ Elab.	ARGUMENT
26			Point/Elab/Imp.	ARGUMENT	DES. REPORT THEORY Desc. of Parts	
27			Point/ Elaborat.	ARGUMENT	Point/ Implicat.	ARGUMENT
28			Point/ Elaborat	IMPLICATION	Point/ Elab. Counter Point	IMPLICATION
29			Point/ Elaborat	IMPLICATION	Point/ Elab.	IMPLICATION
30			Point/ Elaborat	IMPLICATION		
31			Point/ Elaborat	ARGUMENT		
32			Point/ Elaborat	IMPLICATION		
33			Point/ Elab/ Imp	ARGUMENT		
34			Point/ Elaborat.	ARGUMENT		
35			Point/ Elaborat	ARGUMENT		
36			Point/ Elab/ Imp	ARGUMENT		
37			Position	POSITION		

P.	STUDENT 14(D-) EXPOSITION		STUDENT 15 D EXPOSITION		STUDENT 16 (C) DISCUSSION	
	MICRO	MACRO	MICRO	MACRO	MACRO	MICRO
1	Position Preview	THESIS	Orientation	THESIS⌐	Issue Preview	ISSUE⌐
2	Point Elaboration	IMPLICATION FOR CLASS	Position/ Preview		Preview	
3	Point Elaboration	IMPLICATION FOR CLASS	Point/ Elab. Point/ Elab. Implications	ARGUMENT	Point Elaboration Point	IMPLICATIONS
4	Point Elaboration	IMPLICATION	Point Elaboration	ARGUMENT	Point Elaboration	IMPLICATION FOR CLASS.
5	Point Elaboration Point	IMPLICATION	Point Elaboration	IMPLICATION FOR CLASS.	DES. REPORT Des. of Parts	
6	Point Elaboration	IMPLICATION	Point Elaboration	ARGUMENT	Point/ Elab. Implications	ARGUMENT viewpoint
7	Point Elaboration	IMPLICATION	Point Elaboration	ARGUMENT	Point Elaboration	IMPLICATION
8	Point Elaboration	IMPLICATION FOR CLASS	Point Elaboration	ARGUMENT	Point/ R. Elab. Point/ C. Point Elaboration	ARGUMENT viewpoint
9	Point Elaboration	IMPLICATION	Point/Elab. Implications	ARGUMENT	Point/ Elab. Point	ARGUMENT viewpoint
10	Point	ARGUMENT	Point Elaboration	ARGUMENT	Point Elaboration	IMPLICATION
11	Point Elaboration Implications	ARGUMENT	Point Elaboration	ARGUMENT	EXEMPLUM Incident Interpretation EXEMPLUM Incident Interpretation	IMPLICATION implicit
12	Point Elaboration	IMPLICATION	Point Elaboration	ARGUMENT	DESCRIP. REPORT: Th. Description TAXONOMIC REPORT: Th. Desc. of Parts	
13	Point/ Elab. Implications		R. Point Elaboration	ARGUMENT	Point Elaboration	IMPLICATION
14	Point Elaboration	ARGUMENT	Point Elaboration	IMPLICATION FOR CLASS.	Point Elaboration	IMPLICATION
15	Point Elaboration	IMPLICATION	Point Elaboration	ARGUMENT	Point Elaboration Implication	ARGUMENT viewpoint
16	Point Elaboration	IMPLICATION	Point Elaboration Point	ARGUMENT	Point Elaboration	ARGUMENT viewpoint
17	Point Elaboration	IMPLICATION	R. Point C. Point Elaboration	ARGUMENT	Point Elaboration	IMPLICATION
18	Reiteration	REITERATION	Point Elaboration Point	IMPLICATIONS	"Position"	"POSITION"
19			Point / Elaborat. DES. REPORT Theory Class. /Descrip.	ARGUMENT		
20			Point/ Elaborat.	ARGUMENT		
21			Point/ Elaborat.	ARGUMENT		
22			Point EXEMPLUM Incident Interpretation Elaboration	ARGUMENT		
23			Summary Reiteration	REITERATION		

P.	STUDENT 2 (C) EVALUATIVE ACCOUNT		STUDENT 3 (P) EVALUATIVE ACCOUNT		STUDENT 4 (D) EVALUATIVE ACCOUNT		STUDENT 5 (P-) EVALUATIVE ACCOUNT	
	MICRO	**MACRO**	**MICRO**	**MACRO**	**MICRO**	**MACRO**	**MICRO**	**MACRO**
1	Summary of Introduction Summary of Methods	SUMMARY OF ARTICLE	Preview	ORIENTA-TION	Definition	ORIENTA-TION	Summary of Article (Theory)	SUMMARY OF ARTICLE
2	Summary of Discussion	SUMMARY OF ARTICLE	Summary of Abstract	SUMMARY OF ARTICLE			Summary of Article	SUMMARY OF ARTICLE
3	Point Elaboration	ANALYSIS OF ARTICLE link to related theories	Summary of Findings and Discussion	SUMMARY OF ARTICLE	TAXONOMIC REPORT: Desc. of Parts		Summary of Article	SUMMARY OF ARTICLE
4	R. Point R. Elaboration	ANALYSIS OF ARTICLE link to related theories	Summary of Findings and Discussion	SUMMARY OF ARTICLE	Summary of Methods	SUMMARY OF ARTICLE	Point Elaboration Implications	"ANALYSIS OF ARTICLE" comment on research process
5	Point Elaboration	ANALYSIS OF ARTICLE link to related research	Point Elaboration	ANALYSIS OF ARTICLE Comment on findings and link to related theory	Summary of Methods	SUMMARY OF ARTICLE	Point Elaboration	"ANALYSIS OF ARTICLE" comment on research process
6	Point Elaboration	ANALYSIS OF ARTICLE link to related theories	Point Elaboration Implications	ANALYSIS OF ARTICLE Comment on findings and link to related theory	Summary of Methods	SUMMARY OF ARTICLE	Link to related research (1)	"ANALYSIS OF ARTICLE" *Implicit* – link to related theory
7	Point Elaboration Implication for Classroom	ANALYSIS OF ARTICLE link to related theories	Findings Implications Point Elaboration	ANALYSIS OF ARTICLE link to related theory	Summary of Findings	SUMMARY OF ARTICLE	Link to related research (2)	"ANALYSIS OF ARTICLE" link to theory
8	Point Elaboration	"ANALYSIS OF ARTICLE" comment on research process	Findings Point Elaboration Implications	ANALYSIS OF ARTICLE link to related theory	Summary of Discussion	SUMMARY OF ARTICLE	Point R. Elaboration Point	ANALYSIS OF ARTICLE & SUM. OF SEC. ARTICLE Link to research
9	Point Elaboration	IMPLICATION FOR CLASSROOM PRACTICE	Reiteration Recommenda-tions	IMPLICATION FOR CLASSROOM PRACTICE	Point Elaboration	ANALYSIS OF ARTICLE link to related research and comment on research process	Point Elaboration (Reiteration)	IMPLICATION
10					Point Elaboration	ANALYSIS OF ARTICLE comment on research process		
11					Point Elaboration	ANALYSIS OF ARTICLE comment on research process		
12					Point Elaboration	ANALYSIS OF ARTICLE link to related research		
					Point Elaboration Reiteration of Evaluation	IMPLICATION		

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P.	STUDENT 6 (HD) EVALUATIVE ACCOUNT		STUDENT 8 (P-) EVALUATIVE ACCOUNT		STUDENT 9 (D) EVALUATIVE ACCOUNT		STUDENT 10 (D+) EVALUATIVE ACCOUNT	
	MICRO	MACRO	MICRO	MACRO	MICRO	MACRO	MICRO	MACRO
1	Summary of Abstract	SUMMARY OF ARTICLE	Preview	ORIENTA-TION	Overview of Article	SUMMARY OF ARTICLE	Summary of Abstract Implications	SUMMARY OF ARTICLE
2	Summary of Introduction	SUMMARY OF ARTICLE	Summary of Background	SUMMARY OF ARTICLE	Point/ Elab. (Summary)	SUMMARY OF ARTICLE	Summary of Methods	SUMMARY OF ARTICLE
3	Summary of Methods	SUMMARY OF ARTICLE	Point	SUMMARY OF ARTICLE "ANALYSIS"	Point Elaboration (Summary)	SUMMARY OF ARTICLE	Point/ Elaborat. Summary of Findings and Discussion	"ANALYSIS" research process SUMMARY OF ARTICLE
4	Summary of Results	SUMMARY OF ARTICLE	Definition		Point Elaboration (Summary)	SUMMARY OF ARTICLE	Point Elaboration	ANALYSIS link to related research
5	Summary of Discussion	SUMMARY OF ARTICLE	Summary of Background		TAXONOMIC REPORT: Th Desc. of Parts	SUMMARY OF ARTICLE	Point Elaboration	ANALYSIS link to related research
6	Point/ Elab. EXPLANA-TION	ANALYSIS link to related theory	Point	ANALYSIS Link to research	Description of Parts		R. Point R. Elaboration Point	ANALYSIS link to related research
7	EMPIRICAL ACCOUNT Experimental Procedure Findings Point	ANALYSIS OF ARTICLE link to related theories	Summary of Background	SUMMARY OF ARTICLE	Description of Parts		Point Elaboration Counter Point.	ANALYSIS OF ARTICLE link to related research
8	Point Elaboration	"ANALYSIS OF FINDINGS" comment on findings			Description of Parts		Point Elaboration	ANALYSIS OF ARTICLE link to related theory
9	Point/ Elab. Recommen-dations	IMPLICATION			Description of Parts		Reiteration Recommen-dation	IMPLICATION
10	Point/ Elab. Recommen-dations	IMPLICATION	Point Elaboration	"ANALYSIS" Link to related research	Summary of Dis. of Theory	SUMMARY OF ARTICLE		
11			Summary of Study's Aim Point	SUMMARY OF ARTICLE "EVALUAT." Comment on research process	Point (Summary) DES. REPORT (Theory) Description	SUMMARY OF ARTICLE		
12			Summary of Methods	SUMMARY OF ARTICLE	Description			
13					Point Elaboration	IMPLICATION		
14					Point Elaboration	IMPLICATION		
15					Point Elaboration	ANALYSIS (link to theory)		
16			Summary of Findings Point	SUMMARY EVALUATION	Reiteration	ANALYSIS OF ARTICLE		
17			Summary of Findings	SUMMARY OF ARTICLE				
18			Point/ Elab.	ANALYSIS Comm. on find.				
19			Sum. Of Disc.	SUMMARY				
20			Summary & Point Implications	SUMMARY IMPLICATION				
21			Point	IMPLICATION				
22			Summary of Discussion	SUMMARY OF ARTICLE				
23								

P.	STUDENT 11(P-) EVALUATIVE ACCOUNT		STUDENT 12 (P) EVALUATIVE ACCOUNT		STUDENT 13 (C) EVALUATIVE ACCOUNT	
	MICRO	MACRO	MICRO	MACRO	MACRO	MICRO
1	Overview	SUMMARY OF ARTICLE	Preview	ORIENTA-TION	Overview	SUMMARY OF ARTICLE
2	Summary of Methods	SUMMARY OF ARTICLE	DES.REPORT Description		DES. REPORT Theory Description (1)	SUMMARY OF ARTICLE
3	Summary of Methods	SUMMARY OF ARTICLE			DES. REPORT Theory Description (2)	SUMMARY OF ARTICLE
4	Summary of Methods Summary of Findings	SUMMARY OF ARTICLE	Implications		Point Elaboration (summary)	SUMMARY OF ARTICLE
5	Point R. Elaboration	ANALYSIS OF ARTICLE link to related theory	Overview of Article	SUMMARY OF ARTICLE	Point DES. REPORT Descr. of Parts	SUMMARY OF ARTICLE
6	Summary of Article's Conclusion	SUMMARY OF ARTICLE	Point Elaboration Implications	"ANALYSIS OF ARTICLE"	Summary of Conclusion	SUMMARY OF ARTICLE
7			Point Elaboration	"ANALYSIS OF ARTICLE" Comment on article	Point Elaboration	"ANALYSIS OF ARTICLE" Comment on article and reported implications
8			Point Elaboration	"ANALYSIS OF ARTICLE" Comment on article	Point Elaboration	IMPLICATION
9			Point Elaboration	"ANALYSIS OF ARTICLE" Comment on article	Point Elaboration	IMPLICATION
10			Point Elaboration	"ANALYSIS OF ARTICLE" Comment on article	Point Elaboration	IMPLICATION
11			Point Elaboration	"ANALYSIS OF ARTICLE" Comment on article	Point Elaboration	IMPLICATION
12			Point Elaboration	"ANALYSIS OF ARTICLE" Comment on article		
13			R. Point R. Elaboration	"ANALYSIS OF ARTICLE" link to related research		
14			Point	EVALUATION		

P.	STUDENT 14(C) EVALUATIVE ACCOUNT		STUDENT 15 (HD) EVALUATIVE ACCOUNT		STUDENT 16 (P) EVALUATIVE ACCOUNT	
	MICRO	MACRO	MICRO	MACRO	MACRO	MICRO
1	Summary of Abstract	SUMMARY OF ARTICLE	Summary of Introduction	SUMMARY OF ARTICLE	Summary of Abstract	SUMMARY OF ARTICLE
2	Definition		Summary of Methods	SUMMARY OF ARTICLE	TAXONOMIC REPORT: Th	SUMMARY OF ARTICLE
3	DES. REPORT Theory Description		DES. REPORT Description Point	SUMMARY OF ARTICLE EVALUATION OF ARTICLE Link to other theories	Summary of Introduction	SUMMARY OF ARTICLE
4	Summary of Methods	SUMMARY OF ARTICLE	Point R. Elaboration Point	ANALSYIS OF ARTICLE Link to other theories	TAXONOMIC REPORT: Th	SUMMARY OF ARTICLE
5	Summary of Methods		Point Elaboration Implications	ANALYSIS OF ARTICLE Link to other theories	Summary of Lit. Review/ Reported Research (1) Point Elaboration	SUMMARY OF ARTICLE "ANALYSIS OF ARTICLE" Comment on research process
6	Summary of Methods		Point Elaboration	ANALYSIS OF ARTICLE Link to other theories	Summary of Lit Review/ Reported Research (2)	SUMMARY OF ARTICLE
7	Summary of Methods		Point Elaboration	ANALYSIS OF ARTICLE Link to other theories	Point Elaboration	"ANALYSIS OF ARTICLE" Comment on research process
8	Summary of Findings	SUMMARY OF ARTICLE	Point Elaboration	IMPLICATION FOR CLASSROOM PRACTICE	Summary of Lit Review/ Reported research (3)	SUMMARY OF ARTICLE
9	Summary of Discussion	SUMMARY OF ARTICLE			Point/ Elab. Point	"ANALYSIS OF ARTICLE" Comment on research process
10	Point Elaboration Implications	ANALYSIS OF ARTICLE link to related theory			Summary of Lit Review/ Reported research (4)	SUMMARY OF ARTICLE
11	Point Elaboration	IMPLICATION				
12	Recommden-ation				Reiteration	ANALYSIS OF ARTICLE

APPENDIX D: SAMPLE OF SUCCESSFUL EVALUATIVE ACCOUNT

Student 15, 2001 (April), High Distinction

Par.	A developmentally appropriate test of kinder/school readiness – S. Clift, K. Stagnitti, L. DeMello	Micro-genres & sub-stages	Macro schematic stages
01	In their article, Clift, Stagnitti and DeMello compare two tests of kinder/school readiness. Through analysing and comparing the traditional First STEP screening test (Miller, 1993, in Clift, Stagnitti & DeMello, 2000), they compared their success at assessing school readiness. Pretend play as a step in the cognitive development continuum is a concept identified in Piaget's theory, Vygotsky's theory and also in Singer's theory of development. Pretend play as an assessment criteria is a notion supported in text by Berk, Van Hoorn, Nourot, Scales and Allward, and Miller who outline reasons for this. In contrast, there are criticisms that can be made of the study and this is that is operationalises play as something different from cognition, a view opposed by Miller, Berk, Garvey and Van Hoorn, Nourot, Scales and Allward, in their texts.	Summary of Introduction	**SUMMARY OF ARTICLE**
2	In Clift, Stagnitti and DeMello's study, the researchers assessed fifty-eight participants from kindergartens across Victoria, Australia. The sample consisted of twenty-seven males and thirty-one females between the ages of forty-two months and sixty-seven months, fifteen of whom had identified developmental problems. These participants were administered two tests; the First STEP screening test (Miller, 1993, in Clift et al. 2000), a cognitive and language based assessment, and the Test of Pretend Play (Lewis and Boucher, 1997, in Clift et al, 2000), a symbolic play activity based assessment. These results were compared on the basis of the number of students successfully classified as ready for school, the "sensitivity" of the test, which meant successfully classifying those with no known developmental problems (Clift et al, 2000).	Summary of Methods	**SUMMARY OF ARTICLE**
3	The basis of the Test of Pretend Play is pretend play itself, a concept included in a number of developmental theories. Clift, Stagnitti and DeMello (2000) define pretend play as being the substitution one object for another, referring to an absent object or the attribution of an imaginary property to an object. Jean Piaget's theory of cognitive development outlined an appropriate age for the emergence of pretend, or symbolic, play. This theory states that during the pre-operational stage (ages two to seven), children develop "semiotic functioning" ability which is the ability to use one object or event to stand for another (Miller, 1993). In relevance to this article, children tend to start school around age four (Clift et al, 2000), therefore the ToPP is within Piaget's pre-operational stage and students of school age should be able to participate in pretend play.	**Des. Report Description** Point	**SUMMARY OF ARTICLE** **ANALYSIS OF ARTICLE Link to other theories**
4	Another developmental theorist, Lev Vygotsky, includes the concept of pretend play in cognitive development, citing pretend play as a tool in development. He believed that pretend play, or make-believe play, created a Zone of Proximal Development within the child, enabling them to operate at a higher cognitive level than they might otherwise be able to (Berk, 1997). This also fits in with the ToPP referred to in this article as, traditionally, children were tested for their level of cognitive functioning (Clift et al, 2000) of which pretend play assists	Point R. Elaboration Point	**ANALYSIS OF ARTICLE Link to other theories**
5	Pretend play and its effect on cognitive functioning is also a connection made in Jerome Singer's theory. In his studies, Singer found that children who rated highly on tests of pretend, or fantasy, play tended to play more, were able to concentrate on tasks for longer and showed more self-control submitting to rules or while waiting (Singer, 1973 in Garvey, 1991). This again shows that cognitive functioning is assisted by pretend play and in reference to the article, shows a readiness to attend school.	Point Elaboration Implication	**ANALYSIS OF ARTICLE Link to other theories**
6	Besides providing theoretical background of the tests used in this article, the wider readings of this topic also show support for the reasoning and criticism of the structure of the study. The main support from the text for the study is for its use of play as a tool for assessment. In a study in Berk (1997), the students judged more socially competent by their teachers were those who spent more time in socio-dramatic (pretend) play (Burns & Brainerd, 1979, Connolly & Doyle, 1984). The teachers in this study had made a direct link between assessing play and the cognitive benefits of play.	Point Elaboration	**ANALYSIS OF ARTICLE (link to related theory)**

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| 7 | Garvey (1991) found that increases in verbal skills and language use were evident after training in socio-dramatic (pretend) play, hence defining a cause-effect relationship between play and cognition. Also in line with Garvey, Miller (1993) concludes that the development of representational thought (as in pretend play) makes it possible to use language. Both these texts draw a clear distinction between language development and play. | Point Elaboration | **ANALYSIS OF ARTICLE (link to related theory)** |
| 8 | The connection between cognitive development and play forms the basis of the educational implications of this study. The first and most obvious implication is in the use of the Test of Pretend Play to assess school readiness as opposed to the traditional cognitive and language tests. The researchers themselves believe that this assessment technique is more developmentally appropriate to young children (Clift, Stagnitti & DeMello, 2000), a view supported by Piaget, Vygotsky and Singer's theories of development. A less obvious implication of this research is the use of pretend play as a mechanism for developing cognitive and language skills in children, based on the ideas of Berk, Miller, Garvey and Van Hoorn, Nourot, Scales and Alward, that one influences the other. A final implication of this study such as this is the notion of devising other assessment techniques to be developmentally appropriate to the age of the children they are assessing, a notion that was the basis of the research completed in this article. | Point Elaboration | **IMPLICATIONS** |

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Student 8, 2001 (April), Pass -

Par.	Creativity on the Classroom Sharon Morgan and Jill Foster	Micro-genres & sub-stages	Macro schematic stages
01	The article titled *Creativity in the Classroom* by Sharon Morgan and Jill Foster is focused on a small study that has been executed to investigate classroom provisions to magnify creative thinking. These provisions covered modification of the classroom environment and subject materials, processes, specific strategies and teaching models. The journal consists of seven main headings with several sub headings.	Preview	ORIENTATION
2	**Background** The article starts with a great opening about creative thinking and how it is not only about invention, discovery, arts etc, but it is significant for the maturation of a person, including their personality and well-being.	Summary of Background	SUMMARY OF ARTICLE
3	Understanding Creativity It moves straight into the definition of creativity, but lack of agreement has meant that there is no real definition agreement on what creativity is. As quote from Steven Bayley, not from the article but from the text by Vialle, Lysaght and Verenikina (2000, p. 101) *"Creativity is one of those things that is much easier to detect than to define"*. This quote I believe is perfect to define creativity.	Point	SUMMARY OF ARTICLE "ANALYSIS OF ARTICLE" Link to other research
4	Creativity takes numerous forms and if it had to be defined, I believed that it would be the definition from Berk (1997). *"The ability to produce work that is original (that others have not thought of before) and that is appropriate (sensible or useful in some way)."*	Definition	
5	Next, creative thinking and how it involves the collaboration of a person's imagination, cognitive abilities and their whole personality. The integration of these functions releases creativity. (Morgan & Foster, 1999).		
6	Creative thinking involves the cognitive perspective, inspired by Guilford's marking among convergent thinking (procedure where a student applies facts/data and puts it into a anticipated sequence to come up with a possible answer/solution) and divergent thinking (where there is various possible answer/solutions to an problem). (Berk, 1997)	Point	ANALYSIS OF ARTICLE (link to other research)
7	**In the Classroom** Deals with facts about how creativity is currently adopted in the classroom. For example, it was found that only 5% of classroom time was used to strengthen students creative responses and it is implied that Australia is "neglecting its creative potential". A study by Torrance (1983) involved scenarios from 16 countries and found that *"of all the nations, the Australian children saw themselves as least likely to invent something of benefit to mankind."*		SUMMARY OF ARTICLE
8	**Training in Creative Thinking** Covers the importance to be in an environment that is conductive to stimulating creative thinking. Personality traits of children are recognised as significant in creative production. Important to the development of the children's creative thinking is the teachers' skill in asking questions.		
9	**Teaching Strategies** There are numerous approaches to developing creative thinking, such as, De Bono's Cort approach and in which it take a direct, conscious, metacognitive approach. Recognised as a creative product is creative dance and creative drama which "stimulates divergent thinking, imagination and problem svling". (Morgan & Foster 1999)		
10	An article called '100 ways to increase creativity' by Lorraine Bouchard that I believe that could be used within teaching strategies to increase creativity. The packet is used to enrich the teacher and student lives. The activities are designed to make the user more sensitive, aware and flexible, allowing for new and original ideas. Within the teaching strategies heading it has the questions that are most relevant to the study. How do teachers define creative thinking" Are they aware of the personality traits of the child? Do teachers use creative thinking tasks such as brainstorming and problem solving in various ways? Are they using such tasks in all subject across the key learning areas? Are teachers aware of curriculum models that assist in enhancing creativity?	Point Elaboration	"ANALYSIS OF ARTICLE" (link to other research – summary of other research)

11	**Research Design** Nature of the Study The study focused on children and teachers' attitudes towards creativity in the one school. The overall question for the study was: "What is happening in this school with regard to creative teaching and learning? With regard to this question, it is notice that this study can not be a notion of creative thinking in the classroom over Australia because the study was only completed in the one school.	Summary of Study Aim Point	**SUMMARY OF ARTICLE** **ANALYSIS (comment on research process)**
12	Data Collection In collecting the data the ethnographic approach was adapted, were required personal communication between the respondents and the researcher. The data of the research was collected so it could be used to provide feedback to other Primary teachers.	Summary of Methods	**SUMMARY OF ARTICLE**
13	Teacher Questionnaire and Interviews This questionnaire was brief to gain essential data. Twenty teachers were involved with the questionnaire and fifteen teachers participated in informal interviews with comments recorded.		
14	Implementation of Teaching Models Here the article talks about three teaching models, they are: Bloom's Taxonomy – where children participate in the stages of Knowledge, Comprehension and Application. Taylor's Multiple Talent Model – a number of activities relating to creative productivity such as, creating a sea creature, designing a underwater city was used. Parnes' Creative Problem Solving Model – children worked through five stages of the model, Fact-Finding, Problem-Finding, Idea-Finding, Solution-Finding and Acceptance Finding.		
15	Children's Questionnaire: Questionnaries completed by three Year Six classes and one Year Five class and responses were compared between groups. The questionnaires where analysed and assessed to determine similarities, differences and attitudes towards creativity.		
16	Findings Findings found that the teachers had trouble as defining creative thinking and indicated that they were vague in their understandings. The teachers' understanding of personality characteristics that was mention has some responses that seemed to confuse the person and thinking.	Summary of Findings Point	**SUMMARY OF ARTICLE ANALYSIS (comment on research process)**
17	The teaching strategies had most teachers (8/10) using brainstorming and open-ended questioning techniques. Most teachers were unaware of any techniques associated with Curriculum Methods.	Summary of Findings	**SUMMARY OF ARTICLE**
18	Surprising is that teachers at this school did not utilise the creative subjects of Poetry, Dance and Drama. The teachers would like more ideas on how to set up tasks and the article by Bouchard would be a great start for these teachers. There were obstacles to promoting creativity in the classroom such as unavailability of reference and idea, lack of time, etc. The children's responses had a range of creativity but they recognised the importance of creativity at school.	Point Elaboration Summary of Findings	**ANALYSIS OF ARTICLE comment on findings**
19	**Discussion** If creativity was more definable it may be easier for these teachers to understand and then plan appropriate tasks as the teachers in the study indicated restricted or no knowledge of creativity and its personal characteristics.	Summary of Discussion	**SUMMARY**
20	Even thought the teachers said they felt confident with involving children in creative thinking tasks, it is visible that there were not enough tasks being executed throughout the school. Subject used with creative was music but neglected was Drama, Dance and Poetry. The NSW English K-6 Syllabus could be against creativity as it focuses on genre writing e.g. reports rather than imaginative writing. Visual Arts was frequently used as a creative subject.	Summary Implications	**SUMMARY OF ARTICLE** **IMPLICATIONS**
21	A whole school environment support should be used and access to creativity training to teachers would benefit.	Point	**IMPLICATIONS**
22	Overall the study found that teachers are becoming aware of the need for creativity but teachers must be provided with opportunities for creative training for all KLAs. This article only studies the one school and is impossible to generalise results to other schools but can be used to formulate awareness for these schools.	Summary of Discussion	**SUMMARY OF ARTICLE**
23	*"Although teachers show an increasing awareness of the need and the opportunities for encouraging creative behaviour, our education system to a large extent still over looks the intentional enhancement of such behaviour"* (Morgan and Forster, 1994: 42).	Summary of Discussion	

APPENDIX E: Analysis of Thing Types from Student 12's Text, 03/99, P

		Categories	Instances	Total
29. Both **Piaget** and **Vygotsky** played large **parts** in the **role** of understanding development in the view of nature and nurture.	concrete	specific	Piaget[2], Vygotsky[2], theorists, we	6
30. Both **theorists** had **ideas, beliefs** [[that were similar on development]],		generic	you[2], teacher, child[4],	7
31. although there are a few strong **contrasts** [[that make their belief strikingly different and affect the way a person would carry out teaching]].		semiotic	ideas, understanding	2
32. One of these **differences** is the **way** [[they thought [[a person develops]]]].	abstract	generic	parts, role, time, point, way,	5
33. **Piaget** believed		technical		0
34. that you needed to develop				
35. and then the process of learning would then take place,				
36. because of this **belief** a **teacher** would provide **stimulus** for the **child**,		semi-technical	development	1
37. but not interact with the **child**				
38. allowing the **child** to learn in their own **time**. (Vialle 1999).	metaphoric	processual	contrasts, process, belief[2], stimulus[2], view, limitation	8
39. **Vygotsky** on the other hand stated		quality	differences	1
40. that you learnt first				
41. and then developed.				
42. From this **understanding** from a **teacher's point** of view **we** need to be able to know the limitation of the child				
43. and give suitable **stimulus** and help to the **child** [[that will push at the boundaries of the child's understanding, skills and past knowledge]]				
44. to extend their **development**. (Verenikina, 1999).				

47. Although it has become common [[for theorists to see both nature and nurture as important]] –
48. there are still others [[who favour one side.]]
49. Nature theorists generally look at 'stability'.
50. They believe
51. that a certain quality or problem [[a child may have]] will remain with the child for the rest of his/her life (Weiten, 1998).
52. Nature is thought to be the type of development [[that results from maturation]] (Berk, 1997: p 10).
53. Sir Francis Galton, a pioneer in mental testing, leans very much towards the nature aspect of the debate (Weiten, 1998: p 27).
54. Jean-Jacques Rousseau was a French philosopher
55. who also believed
56. that a child's development was influenced entirely by the 'nature' factor.
57. Rousseau believed
58. that children were already born with a sense of right and wrong doings,
59. and that they had "an innate plan for orderly, healthy growth" (Berk, 1997: p 10).
60. Rousseau's theories express his belief of a child's development being completely genetically oriented.
61. On the other hand, it can be known
62. that certain theorists disagree with Rousseau's theory
63. and believe
64. that a child's development is completely influenced by the 'nurture' aspect.
65. Nurture theorists tend to believe
66. that certain events or experiences in a child's life causes lifelong behaviours (Weiten, 1998).
67. Nurture is the type of development [[which results from interactions with the environment]](Berk, 1997: p 10).
68. John Locke, a leading British philosopher, believed
69. that children are born as 'blank slates'.
70. That is, when they are born,
71. they are nothing at all
72. –but throughout time experiences throughout the cause of development mould one's character.
73. Locke believed
74. that environment completely determined the way [[in which a child turns out]] (Berk, 1997, p 10).
75. Another researcher [[who has similar views to those of Locke's]] is John B. Watson,
76. who leans very much towards the environment influencing the course of development
77. –rather than it being hereditary.
78. He quotes:
79. "Give me a dozen healthy infants… regardless of his talents, penchants, tendencies, abilities, vocations and race of this ancestors" (Weiten, 1998, p 6).

	Categories	Instances	Total
concrete	specific	Galton, Rousseau[2] , , Locke[2] , Watson[2] ,	7
	generic	theorists[5], others [theorists], child(ren)[7], philosopher[2], pioneer,	19
	semiotic	slate*, researcher, infants sense, plan, theory(ies)[3]	5
abstract	generic	quality, problem, rest, type[2], aspect[2], factor, events, time, character, course, vocations, race, way	15
	technical	nature[2], nurture[2]	4
	semi-technical	development[3], behaviours, environment[2], stability, testing	8
metaphoric	processual	growth, experiences[2], life, tendencies, talents, penchants	7
	quality		0

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APPENDIX E: Analysis of Thing Types from Student 14's Text, 03/99, P+

		Categories	Instances	Total
2. Children were once thought	concrete	specific	Piaget	1
3. to be born as "a blank slate, tabula rasa" (Berk, 1997, p. 10)	→	generic	child(ren)[2], slate, tabula, behaviourists	5
4. with the environment shaping there development.				
5. This theory is no longer considered to be completely accurate	←	semiotic	theory(ies)[3],	3
6. behaviourists have based there theories on Locke's assumption, [[that children are passive beings continually developing through the nurture of parents and environment with most of the emphasis on nature]] (Berk, 1997).	abstract	generic	pattern, cultures, times, sample, experiments, results	6
39. One of Piaget's theories is development is universal,		technical		0
40. the child [[growing and developing]] in a similar pattern in different cultures and different times.	→	semi-technical	environment, development[2]	3
41. Piaget used a large sample of children in his experiments [[that were taken over many years in different parts of the world]]	metaphoric ←	processual	asssumption	1
42. and still found similar results of [[how children develop]]. (Berk, 1997).		quality		0

APPENDIX E: Analysis of Thing Types from Student 9's Text, 03/99, D-

Text		Categories	Instances	Total
14. One of the concepts [[associated with the nature argument]] is [[that children are organismic]],	concrete	specific	McGue, colleagues	2
15. that is, they have in built "psychological structures…[[that underlie and control development]]" (Berk, 1997, p.5).	→	generic	children³, parents	4
16. The surrounding environment is seen		semiotic		0
17. as supporting the natural process [[which occurs within the child]].	abstract	generic	evidence², studies³, levels, aspect, role, research, correlation, variables, nature, concepts, structures, weight, organism	16
18. The environment does not bring about the child's growth,				
19. rather the child as an "organism selects,				
20. modifies,				
21. or rejects environmental influences [[pressing upon it"]] (White, 1976, p. 100).	←→	technical		0
39. Other evidence [[that supports nature as being the underlying cause of development]] is the various family and twin studies [[which have been conducted]].	→	semi-technical	intelligence², environment³,	5
40. McGue and colleagues (1993) found				
41. that after over one hundred studies of intelligence, had a very high correlation in levels of intelligence. (Weiten, 1998, p. 357).	metaphoric ←	processual	arguments, effects, separation, growth, influences, process	6
42. Whilst this specifically looks at intelligence,				
43. which is only one aspect of development,				
44. it does add weight to the nature arguments				
45. as the role of heredity is examined		quality	trauma	1
46. and shown to be influential.				
47. "research on adopted children also provides evidence about the effects of heredity" (Weiten, 1998, p. 359).				
48. The relevant studies indicate [[that adopted children are more likely to have the same intelligence levels as their biological parents even after being born in a totally different environment (Turkheimer, 1991).				
49. There are variables, such as trauma from separation from parents, [[involved in these studies]],				
50. which would effect the nature of the results.				

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APPENDIX E: Analysis of Thing Types from Student 10's Text, 03/99, D

		Categories	Instances	Total
concrete	→	specific	we, Locke[3],	4
		generic	person, child(ren)[7], reactor, theorists, slates*, parents, tutors, teacher[2], theory[2], ideas,	15
abstract	←	semiotic	information[2], make up[2], activities, forces, way[2], example, rewards, controversy	3
		generic	nature, nurture[2]	11
	→	technical	development[3], environment[6], surrounding (cf.environment)	3
		semi-technical		10
metaphoric	←	processual	interaction, stimulation, support, inputs, experiences, instruction, behaviour	7
		quality		

29. There is an interaction between nature and nurture
30. which is essential to child development.
31. It is [[that "an environment is always needed for genetic information to be expressed (Plomin, etc).]]
32. It is thought
33. that a good environment can promote a child's genetic make up to become apparent
34. and therefore encourage child development (Berk, 1997).
35. The other link between environment and hereditary information is that "each person responds to the environment in a unique way because of their genetic make-up" (Berk, 1997, p. 116).
36. When considering the nature and nurture controversy in teaching
37. it is essential [[to know that "stimulation and support are needed for both"]] (Berk, 1997, p. 7).
38. This can be implemented with certain activities [[occurring in the classroom]]
39. and providing a safe and comfortable surrounding for the children.
40. A child develops in an environment.
41. "By nurture, we mean the complex forces of the physical and social world [[that children encounter in their homes, neighbourhoods, schools, and communities" (Berk, 1997, p.7).]]
42. There is a mechanistic theory [[that supports the idea of nurture [[contributing to child development.]]]]
43. It "regards the child as a passive reactor to environmental inputs" (Berk, 1997, p. 6).
44. There are numerous theorists [[that believe nurture influences child development]]
45. and many of there ideas complement each other.
46. John Locke describes
47. when a child is born
48. they are like "A blank Slate".
49. He comments
50. that "our development rests purely on our experiences in the world" (Lysaght, 1999, p.8).
51. He "described parents as rational tutors
52. who could mould the child in any way [[they wished,]] through careful instruction, effective example, and rewards for good behaviour" (Berk, 1997, p.10).
53. A teacher can therefore help in the process [[of moulding children]]
54. and essentially the teacher should provide a rich environment for children [[to learn and experiment]].

APPENDIX E: Analysis of Thing Types from Student 4's Text, 03/99, HD

#	Text		Categories	Instances	Total
4.	If one takes the view of Darwin's evolutionary theory, and his theory of natural selection,				
5.	the personality traits [[that are most successful]] will be those [[that promote the reproduction of the organism.]]	concrete	specific	subjects, children, (second-born) children, siblings, Buss[2],	6
6.	In turn, those organisms [[that are the products of this reproduction]] are more likely to inherit the personality traits of their parents.		generic	one, humans, food	3
7.	David Buss (as paraphrased by Weiten in Themes and Variation, 1998) contends		semiotic	notion, theory	2
8.	that the "big Five" personality traits – extroversion, neuroticism, agreeableness, conscientiousness, openness to experience – are those which best fit an individual to survival and social success and hence reproduction.	abstract	generic	research, traits[6], study(ies)[2], consciences, fact, amount, evidence, cultures, evolution, group, personality, organisms, order,	19
9.	He argues				
10.	that across cultures, and in evolution, humans have depended heavily on group interactions for food, protection, and other benefits,		technical		0
11.	and that the ability to fit into a group, and make contributions to that group, is vital for survival.				
12.	This is a powerful, and practical argument for the influence of genes on an individual's personality.		semi-technical		0
63.	[[What now colours the research into the impact of environment on personality]] is the realisation that [[what was once deemed the same environment – the family home – is actually different environments for the different children in the family.]]	metaphoric	processual	realisation, experiences, approaches, influence, view, interactions, protection, contributions, argument, influence, ability, benefits	12
64.	The order [[which the children are born in]] can affect their personality traits,				
65.	because they may be treated differently due to their parents' experiences and [[changing approaches to child rearing.]]				
66.	In studies [[conducted by Helen Koch in 1956 (paraphrased by Mussen et al., *Child Development and Personality* 1963)]], it was found [[that in a study of 384 subjects "first-born children tend to have stronger consciences than second borns]];		quality	order, agreeableness, conscientiousness, openness	4
67.	they tend to be responsible, less aggressive, and more intellectually curious" than their younger siblings (ibid, p. 406).				
68.	This may be due to the fact [[that their parents expect a great deal from them (perhaps too much, due to inexperience)]].				
69.	The greater amount of aggression [[shown by second-born children]] may be due to the notion [[they must compete with their siblings to gain satisfaction of their needs.]] (Mussen et al. 1963).				
70.	These general traits are strong evidence for the influence of environment on children's personality.				

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APPENDIX E: Analysis of Thing Types in Student 12's Text, 06/2001, C-

199. The contextual sub-theory suggests [[that intelligent people adapt, shape and select contexts in which their needs and desires will be met.]] (Berk, 1997a).
200. Sternberg realised
201. that within different cultures, 'some children come to value behaviours required for success on intelligence tests' (Berk, 1997a, p. 307)
202. and others may fail these tests
203. but 'display very sophisticated abilities in daily life.'
204. Sternberg does raise the issue of the complexity of assessing intelligence and the different cultural understanding behind the theory of intelligence.
205. I believe
206. that Sternberg's theory offers a window to view intelligence,
207. which also provides a foundation for another intelligence theorist – Howard Gardner.
208. I am encouraged by the work of Gardner,
209. as it pushes the boundaries of traditional approaches to intelligence.
210. Indeed much research needs to be done on this subject,
211. but Gardner provides a challenging new theory.
212. Gardner claims
213. that intelligence can lie within eight different domains: linguistic, logico-mathematical, bodily kinesthetic, musical, spatial, interpersonal, intrapersonal and naturalist.
214. With this in mind, teachers need to be aware of each child's main intelligence
215. and enhance this intelligence through enrichment activities.
216. Teachers need to provide the entire class with learning activities [[that give students opportunities to use different intelligences.]]
217. This teaching implication lends itself to the current NSW Department of Education syllabus
218. which relates to all the intelligences, either implicitly or explicitly.
219. Gardner stresses
220. that a 'lengthy process of education is required to transform any raw intellectual potential into a mature social role.' (Berk, 1997a, p. 307).
221. Implying
222. that a whole school approach to multiple intelligence should be undertaken
223. in order to foster raw intellect to maturity.]]

concrete / abstract / metaphoric	Categories	Instances	Total
concrete	specific	Sternberg², I², Gardner⁴, theorist.	9
concrete	generic	people, children², window*, foundation*, boundaries², teachers²*, class	9
abstract	semiotic	sub-theory², work², theory,	5
abstract	generic	contexts, cultures, tests, issue, research, subject, domains, activities², role syllabus,	10
abstract	technical	syllabus,	1
metaphoric	semi-technical	behaviours, intelligence(s)⁴, intellect	6
metaphoric	processual	success, implication,	6
metaphoric	quality	process, approach, abilities, potential,	0

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APPENDIX E: Analysis of Thing Types in Student 16's Text, 06/2001, C

218. Both Piaget and Vygotsky's theories are valid, available for teachers to use.
219. Piaget emphasises discovery learning, sensitivity to children's readiness to learn and acceptance of individual differences.
220. Piaget believes
221. that a child's development is in stages.
222. This is a fair enough statement,
223. however within the classroom it is important [[to remember [[that children are not all the same]]]].
224. In fact, some children may develop through the stages at a fast rate and some at a slow rate.
225. This is [[why children within a classroom are of mixed abilities]].
226. Reasons for different development rates in cognition could be due to factors such as culture, socio-economic status, disabilities and giftedness.
227. Within the classroom it is so important [[to consider these factors and to modify classes for students who need it]].
228. Vygotsky's key elements for a child's cognitive development emphasise the social and cultural nature of development and how this is mediated from the very beginning of life.
229. "Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first between people and then inside the child" (Vygotsky, 1978, p. 57).
230. According to Vygotsky, social interaction with both peers and adults is an essential ingredient to child development.
231. Vygotsky's Zone of Proximal Development is another important aspect of his theory.
232. This is [[where a child moves beyond self-initiated discovery an in to assisted discoveries and peer collaboration]].

	Categories	Instances	Total
concrete	specific	Piaget^2, Vygotsky,	3
	generic	teachers, classroom^2, classes, child(ren)^5, students, people, ingredient*, peers, adults,	15
abstract	semiotic	theories,	1
	generic	stages^2, reasons, factors^2, culture, status, disabilities, elements, nature, function, level^2,	13
	technical	discovery learning, ZPD, self-initiated discovery, assisted discovery,	4
metaphoric	semi-technical	development^2,	3
	processual	giftedness, sensitivity, acceptance, statement, beginning, interaction, collaboration, abilities	7
	quality	rate^2,	2

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APPENDIX E: Analysis of Thing Types in Student 14's Text, 06/2001, D-		Categories	Instances	Total
104. "Memory is a vital component of learning.	**concrete**	specific	I,	1
105. For educators memory is the only evidence [[that something or anything has been learned".]] (Citation).	↓	generic	educators, theorists, classroom, students[6], key*, goals*, tools*,	12
106. Information processing theorists, have after extensive research, put together their findings on [[how memory works]].	**abstract**	semiotic	knowledge, insight,	2
107. I believe	↑	generic	component, evidence, research, findings, strategies, information[2], limit, time, questions, part, practice, issues[2], setting, factor, task, self-efficacy[2], self-efficacy theory[2],	17
108. that some of their strategies can be effectively implemented in the classroom. Such as the following: [[chunking information]],				
109. as students have a limit on [[how much they can remember at one time]].				
110. As well as learning is more meaningful				
111. when it taps into students' prior knowledge;				
112. by revisiting previous information at the beginning of the lessons can help students remember and also hopefully to see the connections.		technical	scaffolding, intrinsic motivation	6
113. Also by asking questions will keep students attention focused on what is being taught.				
142. "Self-efficacy holds the key to a learners' motivation,	**metaphoric**	semi-technical	memory[2], learning[2], motivation[2],	8
143. for achievement lies with the learner's own beliefs in his ability [[to organise and execute the actions required for a successful performance]] (citation).	↓			
144. As motivating students is an integral part of the teaching learning process,	↑			
145. Bandura's self-efficacy theory gives us some insight on [[how students are motivated]].		processual	environment, modelling beginning, connections, attention, achievement, beliefs, success, determination	7
146. To apply self-efficing theory into the classroom practice,				
147. the following issues need to be applied: a positive classroom environment [[where the emphasis is on to have a go, where students are encouraged in a anon threatening manner, so they do not feel embarrassed or stupid]].				
148. Also goal setting is an important factor in motivating students,		quality	ability, effort	2
149. though goals need to be challenging and achievable for individual students				
150. to encourage motivation.				
151. [[Scaffolding]] and [[modelling]] provide tools for student's success				
152. if students think they can do the task				
153. they are more likely to be motivated to try even harder (citation).				
154. In applying the above issues				
155. self efficacy is enhanced				
156. as does effort and determination in completing tasks				
157. which in turn encourage students intrinsic motivation.				

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APPENDIX E: Analysis of Thing Types in Student 9's Text, 06/2001, HD

No.	Text		Categories	Instances	Total
69.	[[One of the challenges when it comes to motivation]] is [[to combine the notion of ensuring children are successful whilst still providing enough challenge for them to be motivated and to keep exploring new concepts]].	concrete	specific	Rogers, Pyryt, Berk, I[2]	5
70.	The way [[I would ensure that both success and challenge were included]] would be to pass on my belief [[that the process which is used when learning is as important as the end product]].		generic	students[3], NESB, goal*, variables, testers, child,	8
71.	That way challenging tasks can be set				
72.	and even if correct answers don't form the basis for the success,				
73.	acknowledgement of the method [[used to explore the concept]] can be celebrated.		semiotic	notion[2], concept	3
74.	I would also attempt to find out [[what motivates my students]], [[what they attribute their success to]] and the ways [[in which they feel I can assist them to be motivated]] (citation).	abstract	generic	context[3], tasks, answers, basis, method, skills, studies, day, ways, purposes[2]	13
178.	Whilst these broad notions of intelligence are widely acceptable,				
179.	traditional Intelligence Quotient (IQ) testing is still discussed				
180.	and used in educational context,		technical	IQ test(ing)[6], IQ scores	7
181.	hence it is important [[to understand their purposes and limitations]].				
182.	Rogers (1996) points out		semi-technical	motivation[2], intelligence[2], learning, creativity	5
183.	that IQ isn't the same as intelligence				
184.	it is just one form of it.				
185.	Other weaknesses in IQ testing are [[that they measure academic learning only]].				
186.	They do not for example measure creativity, social skills or excellence in physical performance.	metaphoric	processual	belief, challenge(s)[2], acknowledgement, success[2], limitations, ability, achievement, rapport, experience, attention	12
187.	They are biased against those from different backgrounds such as non-English speaking students				
188.	and they measure speed				
189.	but not necessarily diligence and attention to detail (citation).				
190.	Pyryt (1996) however states				
191.	that IQ tests do have the ability [[to identify exceptionally gifted students]].				
192.	IQ tests can also identify students [[who are under achievers, have low verbal ability, have handicaps such as learning disabilities, behavioural disorders, hearing impairments]],				
193.	hence it is important [[to use IQ tests for the purpose]].		quality	weaknesses, excellence, speed, diligence	4
194.	Berk (1997) states				
195.	that thousands of studies have revealed [[that IQ tests have achieved their goal of predicting academic achievement]].				
196.	There are however many variables involved in IQ testing such as rapport with testers, [[how the child feels on the day]] and their prior experience with testing (citation).				
197.	As a result of this I will keep the emphasis placed on IQ scores in their proper context				
198.	when teaching.				

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APPENDIX E: Analysis of Thing Types In Student 10's Text, 06/2001, HD

		Categories	Instances	Total
175. Creativity is an interesting and worthwhile concept [[which should not be forgotten when addressing the issue of cognitive development.]]	concrete	specific	Guildford, I[6], teachers[2], Parnes,	9
176. "Guilford (1959) believed		generic	everyone, teacher(s)[6], students, children[3], person[2], classes	14
177. that creativity involves **fluency** of thinking, **flexibility** of thinking, **originality, sensitivity** of problems, **redefinition and elaboration**, and **divergent thinking abilities** (citation)".				
178. I believe		semiotic	concept	1
179. that **everyone** can be creative.	abstract			
180. From observing other **teachers**		generic	activities[2], component, strategies, way, range	6
181. and remembering my **teachers**,		technical	divergent thinking[2],	2
182. I feel				
183. that **teachers** try to hide children's **creativity**,		semi-technical	creativity[5],	5
184. and don't foster the **development** of it.				
185. There are too many **activities** [[which all students have to do the same]]	metaphoric	processual	redefinition, elaboration, abilities, development, solutions, judgements, products, opportunities	8
186. and there is no **way** [[students can be individual and creative]].				
187. As a **teacher** I hope to be able to help **students** to be creative				
188. by providing a wide **range** of resources, materials and choices				
189. where **children** can show their **creativity**.				
190. A major **component** of creativity is **divergent thinking**.		quality	fluency, flexibility, originality, sensitivity	4
191. **Divergent thinking** involves [[having multiple **solutions** to a problem]] (citation).				
192. I believe				
193. that **children** can be taught [[how to be creative]].				
194. **Teachers** need to give **children activities** [[where children are encouraged to look at the problem and try and solve it in as many different ways as possible]].				
195. This will help their **creativity** develop.				
196. "**Parnes** would suggest				
197. that a highly creative **person** is able to make evaluative **judgements** about his or her **products**" (citation).				
198. As a **teacher** I hope to be a creative **person**				
199. and evaluate and judge my **classes**,				
200. so I can in turn produce better teaching **strategies** and learning **opportunities**.				

APPENDIX E: Analysis of Thing Types in Student 4's Text, 06/2001, HD

Total	Instances	Categories	concrete / abstract / metaphoric
10	Piaget, Vygotsky, I[7], we	specific	concrete
15	believer, others[2], child, classroom[3], family, students[5], teacher, learner	generic	→
1	principles,	semiotic	abstract
15	activities, language[6], tool, function, purpose, steps, way, task, problems, exercises	generic	← →
0		technical	←
2	learning, behaviours	semi-technical	
12	attempts[2], use[3], dialogue, view[2], self-talk, talk[2], aid,	processual	metaphoric
1	truth,	quality	

A classroom that is social

93. **Piaget held**
94. that **learning** came about through the child's **attempts** to understand the world, and their individual **attempts** to either assimilate or accommodate the information.
95. **Vygotsky**, however, was a staunch **believer** [[that social interactions are crucial for development from the very beginning of a child's life]] (Verenikina, 1999, p. 34).
96. The **child's use** of communicative behaviour and language is encouraged by the significant **others** in the **child's life**,
97. and the **child** engages in the joint **use** of cultural tools.
98. **I think**
99. that **Vygotsky's principles** of social learning should apply in the **classroom.**
100. **A classroom** [[where the maximum amount of learning can take place]] should be like a **family**, with the **teacher** and the child's **peers** becoming significant **others.**
101. **Students** and the **teacher** should be involved in **dialogue** and the **use** of cultural tools, and joint exploration **activities.**
102. According to **Vygotsky, language** is an essential **tool** in the child's development.
103. Initially, a child's **language** has a purely communicative **function,**
104. but later, it becomes internalised,
105. and acts as a tool for self-regulation and control (Verenikina, 1999).
106. Although Piaget's **view** of egocentric speech seems valid
107. (I have witnessed egocentric speech in action),
108. **I believe**
109. that **language** has a much greater **purpose,**
110. and that Vygotsky's **view** of self-talk is closer to the **truth.**
111. As a **learner,** <<>> **I** often revert to **self talk,**
112. mentally and verbally break **it** down into more manageable **steps,**
113. which helps to regulate the **way** [[I perform the task]].
114. << especially when confronted with a difficult **task**>>
115. Therefore, **I** firmly believe in the **use** of language in the classroom,
116. and will encourage this accordingly.
117. **Students** should be able to talk to each **other** and to **themselves** if necessary,
118. and these **behaviours** will be supported
119. providing the **talk** is acting as a valid **aid.**
120. To encourage this helpful **talk,**
121. **I** will ensure **I** model it to **students**
122. as **we** work through joint **problems and exercises.**

APPENDIX F: Nominal Groups with Classifying Elements in the First Year Texts

Student 12, P	Student 16, C-	Student 14, P+
• *nature-nurture* debate • *biological* development • *physical* development • *cognitive* processes • the effects of *hormonal* changes • the aspects of *cognitive* development • *socioemotional* processes • *the ecological system* theory • *gender* classrooms • *controlled* classrooms • *genetic* influence of the sex of the child • *class peer* pressure • *social* values • *peer* acceptance • *long-term psychological* adjustment • *academic and behavior* problems • *role* model	• *nature nurture* controversy • *environmental* influences • *hereditary* information • *physical and social* world • *identical* twins • James Mark Baldwin, an *American psychologist* • *nature* theorists • *nurture* theorists • John Locke, a leading *British philosopher* • *future* teacher • *family and environmental* backgrounds • *child developmental* issue	• *genetic and environmental* influences • *child development* theorists • *nature versus nurture* debate • *behaviourists* • *behaviourist* Watson • *classical* conditioning • *social* behaviour • *observational* learning • *identical* twins • *self* discovery • *hands on* learning • *assisted* discovery • *child-teacher* interaction
TOTAL = 17	TOTAL = 12	TOTAL= 14

APPENDIX F: Nominal Groups with Classifying Elements in the First Year Texts

Student 9, D-	Student 10, D	Student 4, HD
• *child* development • those who take a *behaviourist* stance • *nature-nurture* debate • *primary school age* children • *language* development • *in built psychological* structures • *surrounding* environment • *environmental* influences • *constructivist* viewpoint • natural *biological* development • *cognitive* development • *biological* progression • *sensorimotor* stage • *preoperational* stage • *concrete operational* stage • *formal* operation • *nature* argument • *universal* milestones • *family and twin* studies • *predetermined genetic* influences • *mechanistic* theory • *environmental* inputs • *behaviourists* • Ivan Pavlov (1849-1936), a *Russian scientist* • *reflex* responses • *classical* conditioning • *neutral* stimulus • *nurture* argument • John B. Watson (1878-1958) an *American psychologist* • *stimulus-response* associations • *psychological* reflexes • *voluntary* behaviours • *operant* conditioning • *modelled* reading • *biological* guidelines • *hereditary and environmental* factors • *teaching* strategies	• *genetic* characteristics • *physical and social* world • *child* development • *hereditary* factors • the *hereditary* information.[[we receive.. • the *organismic* theory • *psychological* structures • *genetic* information • a child's *genetic* make up • *nature and nurture* controversy • *the physical and social* world • a *mechanistic* theory • *environmental* inputs • *classical* conditioning • *behaviourists* • *operant* conditioning (*voluntary* behaviours)	• *nature-nurture* debate • *genetic* inheritance • Darwin's *evolutionary* theory • his theory of *natural* selection • *personality* traits • the *big Five personality* traits • *identical* twins • *fraternal* twins • *personality* development • *family* environment • *personality* differences • *genetic* diversity • Barbara Burks, a respected *psychologist* • *American Psychological* Association • *medical* problems • *neurotic* symptoms • *manic depressive* insanity • *social* situations • *first-born* children • *second-borns*
TOTAL = 37	TOTAL = 16	TOTAL = 20

Student 12, C-	Student 16, C	Student 14, D-
- *learning* theories	- *theoretical* perspectives	- a *future* educator
- *teaching* implications	- *intrinsic and extrinsic* motivation	- a *beginning* teacher
- *biology* background	- *external* motivation	- *cognitive* development
- *pre-operational* stage	- *Piagetian and information processing* theories	- a *construction* process
- *primary* education	- *internal* motivation	- a *socially* mediated process
- *concrete-operational* stage	- *extrinsic* influences on motivation	- *information processing* theories
- *formal operation* stage	- his *social learning* theory	- *cognitive* system
- *teaching* application	- *social* situations	- *thought* processes
- *neo-Piagetians*	- *learning* processes	- *cognitive* resources
- *neo-Piagetians*, Case and Fisher	- *learning* environment	- a child's *academic* performance
- *Piagetian and Information Processing* Theory	- one of the theorists supporting the *psychometric* view	- Gardner's theory of *multiple* intelligences
- *cognitive* development	- the *multifaceted* view that is supported by Sternberg and Lubarts *investment* theory	- Bandura's *self-efficing* theory of *intrinsic* motivation
- *information processing* capacity	- each child's *creative* abilities	- a *social* context
- *memory* capacity	- *creative* writing	- *assisted* discovery
- *mental* space	- *class* presentations	- zone of *proximal* development
- *brain* maturation	- *public* speaking	- *classroom* practice
- *teaching* applications	- *creative* talent	- *learning* opportunities
- *Piagetian* classroom	- *psychometric and multifaceted* views	- *holistic* education
- *Piagetian* stage	- the *developmental* theory	- *reciprocal* teaching
- *teaching* implication	- scaling of *general* intelligence	- *cooperative* learning
- *neo-Piagetian* theory	- *future primary* teacher	- literacy's *whole language* approach
- *neo-Piagetians*	- Sternberg's *triarchic* theory of intelligence	- *language* process
- Atkinson and Shiffrin's *store* model of *mental* functioning	- Gardner's theory of *multiple* intelligences	- *middle to upper* years of primary
- *sensory* register	- *musical* ability	- *communication* skills
- *short term* memory	- *Information processing* theory	- *group* work
- *long term* memory	- *cognitive* system	- *class* discussions
- the idea of *attentional* processing	- *human* mind	- a *constructivist* theorist
- *memory* resources	- *computer* system	- a *learning* centre
- *memory* strategies	- Atkinson & Shiffrin's *store* model	- *reading* materials
- *self*-regulation	- three ways in which the input information is stored in the *cognitive* system	- *concrete* materials
- *social* learning	- *sensory* register	- *IQ* scores
- *peer* tutoring	- *short term* memory	- an effective predictor of *school* performance
- *cooperative* learning	- *long-term* memory	- *socio-economic* groups
- Vygotsky's *sociocultural* theory	- *cognitive* development	- *educational* opportunities
- *social* environment	- *domain specific* knowledge	- a small *genetic* component to intelligence
- zone of *proximal* development	- *rote* memorization	- Gardner's *multiple* intelligences
- *intelligence* theory of Sternberg	- *discovery* learning	- *enrichment* program
- the *triarchic* theory of intelligence	- *socio-economic* status	- the *teaching learning* process
- *knowledge* acquisition	- *social and cultural* nature of development	- *intrinsic* motivation
- *working* memory	- *social* interaction	- *extrinsic* motivation
- the *contextual* sub-theory	- zone of *proximal* development	- *university* student
- *enrichment* activities	- *self-initiated* discovery	
- *learning* activities	- *assisted* discovery	
- *NSW Department of Education* syllabus	- *peer* collaboration	
- theory of *multiple* intelligence	- *classroom* activities	
- Sternberg & Lubart's *investment* theory of creativity	- student's *prior* knowledge	
- *intellectual, personality, motivational, & environmental* resources	- *peer* work	
- *social and physical* environment	- *cognitive* ability	
- *social* interaction	- *child* development	
	- *classroom* environment	
TOTAL = 49	TOTAL = 49	TOTAL = 41

APPENDIX F: Nominal Groups with Classifying Elements in the Third Year Texts

Student 9, HD	Student 10, HD	Student 4, HD
- *future* teacher - *student* learning - *information* processing - *self-directed* learning - *environmental* print - *intrinsic* motivation - *extrinsic* motivation - *situated* learning - *self-regulatory* skills - *learning* skills - *individualised* learning - *cooperative* learning - *peer* learning - *teaching* implications - *discovery* learning - *teaching* practice - *social* interaction - *preoperational* stage - *infants* teacher - *Piaget's stage* theory - *rote* learning - *non-Indigenous and Indigenous* Australians - Vygotsky's *sociocultural* theory - *social* environment - zone of *proximal* development - *private* speech - *information processing* model - *critical* thinking - Sternberg's *triarchic* model - Gardner's theory of *multiple* intelligence - *pedagogical* practices - traditional *Intelligence Quotient (IQ)* testing - *social* skills - *physical* performance - *non-English speaking* backgrounds - *educational* implication - *environmental* influences - *learning* material - *classroom* implications - *future primary* educator - *curriculum and pedagogical* practices	- *cognitive* development - *metacognitive* skills - *social* interaction - Piaget's theory of *genetic* epistemology - Piaget's *stage* theory - *individual* performance - effective *teaching* programs - *cognitive* system - this concept of *cognitive* development - different children's *learning* styles - *cognitive* structure - *socially mediated* process - Vygotsky's Zone of *Proximal* Development - *assisted* discovery - *social* skills - *thinking and learning* processes - *teaching* programs - *thinking* strategies - *human* cognition - *computer* processor - *social* experiences - *social* interaction - *cognitive* apprenticeship - *cognitive* and metacognitive skills - *divergent thinking* abilities - *divergent* thinking - *learning* opportunities - *assessment* tasks - *IQ* tests - children's *cognitive* abilities - *psychometric* view of intelligence (IQ testing) - *social-class* background - Gardner's theory of *multiple* intelligence - *cognitive* ability - *intrinsic* motivation - *extrinsic* motivation - *Piagetian and Information processing* theories	- *educational* theory - *behaviourists* - *teaching* principles - *constructivist teaching* strategies - *autonomous* thinking - *intrinsic* motivation - *social* interaction - *social* learning - *streamed* groups - *peer* tutors - *constructivist* education - *teacher* modelling - *scaffolded* instruction - *peer* learning - Czikszentmihalyi's theory of *big C* creativity - *little c* creativity - *divergent* questioning - *creative* thinking - *SCAMPER mnemonic* - *problem based* approach - *divergent and convergent* thinking - Howard Gardner's theory of *multiple* intelligences - *learning styles* theory - zone of *proximal* development - *scaffolded* instruction - *cooperative and supportive* behaviours - *communicative* behaviour - Piaget's view of *egocentric* speech - Vygotsky's view of *self* talk - the principles' of Robert Sternberg's *triarchic* theory - *developmental* tool - *self*-regulation - *teaching/learning* strategy - *practice* play - *symbolic* play - *dramatic and sociodramatic* play - *constructive* play
TOTAL = 41	TOTAL = 37	TOTAL = 37

APPENDIX G: Instances of Reporting in the Students' 1999 Texts

99, Student 12, P-	99, Student 16, C-	99, Student 14, P+	99, Student 9, D-	99, Student 10, D	99, Student 4, HD
• Berk conveys (ii)	• James Mark Baldwin believes (ii)	• Children were once thought (iii)	• the work of Piaget and family studies[2] (v)	• Rousseau has the idea (v)	• the view of Darwin's evolutionary theory (iv)
• In regard to Lysaght[3] (i)	• Piaget & Vygotsky believe (ii)	• Watson was quoted as saying (ii)	• one of the concepts associated with the nature argument… (v)	• He believes that (ii)	• David Buss…contends that (ii)
• With reference to Berk (i)	• they believe (ii)	• Piaget identifies (ii)	• [Piaget] his theory emphasises (v)	• It is thought that (iii)	• He argues that (ii)
• Berk explores and explains (ii)	• nature is thought to be (iii)		• Piaget acknowledged (ii)	• He comments " (ii)	• Weiten reports that (ii)
• Piaget believed (ii)	• Sir Francis Galton leans very much (ii)		• Piaget believed (ii)	• Ivan Pavlov has a strong belief (iv)	
• Vygotsky stated (ii)	• Rousseau …believed (ii)		• the relevant studies indicate (iii)	• and explains (ii)	
• Berk believes (ii)	• nurture theorists tend to believe (ii)		• he noticed (ii)	• He explained this (ii)	
• this belief (iv)	• John Locke…believed (ii)		• he thought (ii)	• John Watson like Pavlov argued that…(ii)	
• the view of the expanded environment conveys (iv)	• Locke believed (ii)		• Watson's widely cited quote (iv)	• Watson also concluded that (ii)	
• these ideas (v)	• He quotes (ii)		• the work of the nature theorists (v)	• Piaget viewed the child as (ii)	
	• Rousseau's theories express (v)			• B.F. Skinner thought (ii)	
	• certain theorists disagree (ii)			• Most of the theorists realise (ii)	
	• [certain theorists] believe (ii)				

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APPENDIX G: Instances of Reporting in the Students' 2001 Texts

01, Student 12, C-	01, Student 16, C	01, Student 14, D-	01, Student 9, HD	01, Student 10, HD	01, Student 4, HD
Piaget viewed (ii)	Piaget... concluded (ii)	Vygotsky and Piaget both emphasise (ii)	They suggest (ii)	many different and interesting perspectives (iv)	the behaviourists believed (ii)
According to Piaget (i)	Piaget's view (iv)	Bandura's theory (v)	Piaget believed (ii)	Piaget's theory of genetic epistemology (v)	Csikzentmihalyi's theory of big C creativity (v)
another concept .. by Piaget (v)	Unlike Piaget, Bandura focusses on (ii)	Vygotsky's main element is (v)...	Piaget's theory... (v)	Piaget's theories (v)	Howard Gardner's theory of Multiple Intelligences (v)
This concept of Piaget (v)	He argues (ii)	according to Vygotsky (i)	a concept of Piagets' (v)	His theory (v)	another aspect of Vygotsky's theory (v)
Another area of P. theory (v)	two main views held on the theory of creativity (iv)	like Vygotsky his theories (v)	Piaget's notion of the stages of development will (v)	Piaget believed (ii)	Piaget held (ii)
Piaget's view on egocentrism (iv)	both views on creativity (iv)	[Piaget] has many ideas (v)	Piaget's stage theory (v)	Piaget's stage theory assumes (v)	Vygotsky's principles (v)
Piaget believed that (ii)	His view (iv)	his approach (iv)	Piaget's belief (iv)	Piaget states (ii)	according to Vygotsky (i)
Piaget's theory (v)	the multifaceted view (iv)	Piaget view on discovery learning (iv)	the theories of Gardner and Vygotsky (v)	According to Piaget (i)	Piaget's view of egocentric speech (iv)
Case's research implies (v)	this theory focusses on (v)	my belief and Piaget's (iv)	Other aspects of Vygotsky's theory (v)	Piaget's observations (iv)	Vygotsky's view of self-talk (iv)
they consider (ii)	both the psychometric and multifaceted views on creativity (iv)	one of Piaget's educational principles (v)	Vygotsky's theory notes (v)	Piaget's metaphor (v)	Vygotsky also notes (ii)
Case perceived (ii)	the other view of intelligence	Piaget advocates (ii)	Other research (iii)	Piaget's theory of learning (v)	the principles of Robert Sternberg's triarchic theory (v)
Case believed² (ii)	this theory suggests that (v)	Researchers have shown that (ii)	Chi and Koeske showed that (ii)	Piaget also didn't regard (ii)	his theory emphasises (v)
Case's research (v)	Guilford's structure of intellect (v)	Gardner's theory of multiple intelligence (v)	Recent evidence has shown (iii)	he believed that (ii)	Sternberg's theory (v)
the belief (iv)	Sternberg's triarchic theory of intelligence (v)	Gardner's theory of multiple intelligence (v)	Sternberg's triarchic model (v)	Vygotsky agreed (ii)	according to Vygotsky (i)
Case does stress (ii)	Gardner's theory of multiple intelligences (v)	Bandura's self efficacy theory (v)	(theory) It considers (v)	with Piaget's notion (v)	Vygotsky particularly values and believes (ii)
literature shows (iii)	[Information Processing theory] suggests that (v)		Gardner's theory of M.I. (v)	Vygotsky's theory (v)	this belief in make believe play (iv)
his theory (v)	Many researchers believe (ii)		Gardner's theory (v)	Vygotsky saw (ii)	Her findings suggest (v)
I. P.like P.s theory regards (v)	Both Piaget and Vygotsky's theories (v)		Gardner's theory (v)	this belief (iv)	Piaget recognised that (ii)
the ...approach (iv)	Piaget emphasises (ii)		Rogers points out that (ii)	Vygotsky sees (ii)	He described (ii)
Atkinson and Sch.s ...model (v)	Piaget believes (ii)		Pryt however states that (ii)	Piaget's approach (iv)	Both Piaget and Vygotsky believed (ii)
they proposed (ii)	According to Vygotsky (i)		Berk states that (ii)	Vygotsky's beliefs about the importance...(iv)	Vygotsky felt (ii)
Vygotsky ....theory believed (v)	Both Piaget and Vygotsky's theories (v)			he comments (ii)	Piaget felt (ii)
Like Piaget Vygotsky believed that (ii)				Vygotsky's notion of ...(v)	
Vygotsky also states (ii)				Guilford believed (ii)	
A distinct key concept of Vygotsky's was (v)				Pames would suggest that (ii)	
Vygotsky's view (iv)				De Bono points out (ii)	
Believing that (ii)				Csikzentmihalyi believes (ii)	
Sternberg realised (ii)				he stated (ii)	
Sternberg does raise the issue (ii)				Gardner and Csikzentmihalyi see (ii)	
the work of Gardner (v)				Reglin states that (ii)	
Gardner claims that (ii)				theories like Piaget's Vygotsky's, information processing, Creativity and Intelligence (v)	
Gardner stresses that (ii)					
in Sternberg's work (v)					
According to Sternberg and Lubart's investment theory (v)					
Bruner's theory on motivation (v)					
Maslow's theory like Bruner (v)					
One of Maslow's major concepts is (v)					
Vygotsky's theory (v)					

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APPENDIX H Results for Instances of Implicit Engagement in the Students' 1999 Texts

99, Student 12, P-	99, Student 16, C-	99, Student 14, P+	99, Student 9, D-	99, Student 10, D	99, Student 4, HD
it is important [[...]] (x)	As a teacher, it is necessary to be aware (x)	the most influential study (viii)	teachers ...need to be aware (v)	a teacher can therefore help in the process (2) (v)	a powerful and practical argument (viii)
we need to make sure it is happy (2) (vi)	it may be necessary [[to remind the child...]] (vi)	are important issues (viii)	as teachers we should encompass the view... (v)	a teacher needs to realise this (x)	it is clear [[even physical traits]] (ix)
	the teacher must be aware (v)	is of equal importance (viii)	this is critical for the nurture argument (ix)	a very important issue (viii)	is the realisation that [[...]] (viii)
	it is an important issue to understand (ix)	the modelling is also important for teaching (iv)	this should be applied to (v)	as a teacher you must (v)	it is vital [[to have a stimulating ...]] (vi)

Results for Instances of Explicit Engagement in the Students' 2001 Texts

01, Student 12, C-	01, Student 16, C	01, Student 14, D-	01, Student 9, HD	01, Student 10, HD	01, Student 4, HD
the implication is clear (ix)	motivation is a critical part (viii)	is essential (vi)	It is important [[to understand...]] (x)	immense scope (viii)	a surprisingly difficult task (x)
teachers need to (v)	an important aspect (viii)	vital to learning (ix)	students need to be able to (v)	the most detailed of all the theorists (viii)	a difficult process (x)
one criticism of Piaget's theory (viii)	is important [[to remember]] (x)	students need knowledge on... (v)	effective learning must involve (v)	many criticisms (viii)	this approach is promising (ix)
[[therefore to provide lessons ...]] (vii)	students should be given free time (v)	an important part of learning (viii)	is the most powerful [[for compelling students..]] (ix)	limited validity (viii)	could be applied to (v)
this should be (v)	the teacher should never neglect (v)	children need to be encouraged (v)	a key factor in motivation (viii)	help teachers to evaluate (viii)	tremendous help (viii)
[[to enable students to develop the ability to think critically...]] (vii)	this experience was enlightening (x)	an integral part of teaching (viii)	students should be shown (v)	teachers should be giving children (v)	the most effective ways (vii)
the teacher should (2) (v)	children should be given (v)	a sound way of teaching a task (vii)	the key idea is (viii)	it is also beneficial [[...]] (vi)	[[encouraging creativity in the classroom]] (vii)
teaching applications...	it is important [[to remember..]] (x)	[[to achieve the right balance of help...]] (vii)	[[to combine the notion that students are still successful..]] (vii)	this concept is useful (ix)	it is also important [[to develop...]] (vi)
should strive to (v)	little recognition (viii)	this approach would be useful (ix)	the major limitations in his theory (viii)	sufficiently consider (ix)	it is therefore vital [[for the teacher ...]] (vii)
students should be (v)	it is beneficial [[to have a general idea]] (x)	extremely important and valuable strategy (viii)	other research is also relevant (ix)	a huge impact (viii)	a purpose (viii)
the teaching implication is unmistakable (ix)	two very important areas of thinking...(viii)	an important teaching strategy (viii)	makes clear [[that intelligence...]] (ix)	a major factor [[which ...]] (viii)	is particularly useful (viii)
teachers need to (v)	very important for developing learning (ix)	things to consider are (vii)	it is important [[to understand ...]] (x)	an insight {viii)	they must plan activities (v)
[[teachers need to be aware to ...]] (vii)	[[to make the work interesting]] (vii)	it is crucial [[to get the correct mix of groups]] (vi)	other weaknesses in IQ testing (viii)	teachers need to help students (v)	they cater their assessments (v)
teachers need to (v)	should be as little distraction as possible (v)	the centres should be student directed (v)		a crucial role (viii)	a supportive classroom (viii)
[[to inform them prior to study what information is most important]] (vii)	both ...theories are valid (ix)	the classroom needs to be rich in (v)		an important factor [[...]] (viii)	another aspect of Vygotsky's theory [[that can be included in the principle of a supportive classroom]] (viii)
it is critical [[that]] (vi)				is important [[for teachers to give...]] (vi)	
[[promoting memory strategy use ...]] (vii)				all children should be given (v)	
teachers need (v)				teachers should put thinking ... (v)	

Continued over page

Results for Instances of Explicit Engagement in the Students' 2001 Texts (Continued)

01, Student 12, C-	01, Student 16, C	01, Student 14, D-	01, Student 9, HD	01, Student 10, HD	01, Student 4, HD
• teachers also need to (v) • [[teachers provide]] (vii) • should be harnessed (v) • should be taught (v) • should be between (v) • cooperative learning are effective (ix) • concepts so detailed (ix) • interesting implications (viii) • [[activities should be organised...]] (vii) • many implications (viii) • teachers need to (v) • an important concept (viii) • major implication (viii) • students need to be given (v) • a challenging new theory (viii) • teachers need to be aware (v) • a whole school approach ... should be undertaken (v) • tests should be (v) • discussions should be created (v) • are recognisable (ix) • students should be edified (v) (x3) • are facilitating (ix) • teachers need to be prepared (v) • children need to be motivated (v) • [[to have the majority of motivation...]] (vii) • a critical element (viii) • valuable light (ix)	• a fair enough statement (viii) • it is so important [[to consider ...]] (vi) • another important aspect of his theory (viii) • should be implemented (v) • children should be given (v) • teachers can adapt (v) • peer work allows for (v) • positive validity (viii) • negative attributes (viii) • [[to find those theories theories that you ...]] (vii)	• students should be able to encounter (v) • an important issue (viii) • wonderful classroom practice (viii) • an important tool (viii) • gives teachers an effective way (viii) • some insight (viii) • need to be applied (v) • an important factor (v) • the ideal is (viii) • a major influence (viii) • they need to be extrinsically ... (v) • extrinsic motivation should be used (v)	• a trait [[to be encouraged]] (vii)	• teachers should demonstrate (v) • another influential theory (viii) • it is important for teachers [[to have ...]] (vi) • teachers should make activities (v) • teachers need to give children (v) • the most important concept to come from information process (viii) • a major component of creative thinking (viii) • teachers need to give children (v) • a flaw with this notion is (viii) • which should be associated with (v) • shouldn't be used (v) • are only useful (ix) • the test should only (v) • significant support (viii) • beneficial for teachers (ix) • [[also personalising activities and giving children the choice ...]] (vii) • a critical part (viii) • a flaw in these theoretical perspectives (viii) • it should never be thought (v) • it is essential as teachers [[ ]] (vi)	• a classroom [[ ]] should be like a family (v) • students and teachers should be involved (v) • an essential tool (viii) • seems valid (ix) • is closer to the truth (viii) • students should be able to talk to each other (v) • a valid aid (viii) • the central importance (viii) • it is essential [[that education develops the child's ability to self educate]] (vi) • it is also important [[...that teachers are flexible]] (vi) • [[that a teacher must cater for...]] (vii) • trivial and non-serious (ix) • the essence of serious, concentrated thinking (ix) • this principle of including play (vii) • would have to be adapted (v) • [[children should be challenged...]] (x4) (vii)

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