

**THE ROLE OF UNDERPREPAREDNESS IN THE DIFFICULTIES
EXPERIENCED BY SECOND-LANGUAGE STUDENTS WITH ACADEMIC
ESSAY WRITING**

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**SUBMITTED IN FULFILLMENT OF THE REQUIREMENTS FOR THE M.A.
SOCIAL SCIENCE (PSYCHOLOGY) DEGREE, AT THE UNIVERSITY OF
NATAL, DURBAN.**

**THE FINANCIAL ASSISTANCE OF NATIONAL RESEARCH FOUNDATION
(NRF) TOWARDS THIS RESEARCH IS HEREBY ACKNOWLEDGED.
OPINIONS EXPRESSED AND CONCLUSIONS ARRIVED AT, ARE THOSE OF
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NATIONAL RESEARCH FOUNDATION.**

1 MARCH 2000

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Abstract:

Using first-year, Psychology I examination essays, the role of underpreparedness in the difficulties experienced by English second-language students in academic essay writing was investigated. Essays were selected from each of four performance categories; over 70%, between 65% and 50%, between 45% and 35%, and below 30%. A representative sample of English first-language essays were also selected to provide important comparative analyses, in order to clearly delineate the nature of linguistic and cognitive contributions to the phenomenon of underpreparedness. The essays were subjected to three kinds of linguistic analysis. The micro-level analysis consisted of a basic error analysis, which combined a surface strategy taxonomy with a linguistic classification of errors. Second, the essays were analysed using a five-way classification model for difficulties with cohesion. The results for these micro-level analyses indicated that surface-level errors made little difference to the substance of the text (essay) and that markers were tolerant of such errors in their assessment of the essays. Consequently, these taxonomies only pointed to more fundamental linguistic or cognitive problems to explain the mark discrepancies between the different performance groups. A macro-level analysis was conducted to examine the global inter-relationships within the essays. Using a modified form of discourse analysis and a coherence scale analysis, the degree to which students initiated, developed and resolved the central themes/topics of the essay was assessed. The results of the present study suggest that second-language students present with four key features of difficulty in academic essay writing. In particular, the form and structure of essay writing, the development of conceptual principles, metacognitive control, and the norms of distanced writing. This study further points to three main areas where mediation and assistance could take place to

facilitate underprepared, second-language students, namely developing linguistic competence, explicating the implicit set of conventions particular to academic writing, as well as developing the appropriate epistemic assumptions for university-level textual engagement.

Acknowledgements:

I would like to express my sincere thanks to a number of individuals who have given generously of their time and expertise to assist with this piece of research. I am particularly in debt to Jill Bradbury for her time and effort spent reading and commenting on drafts chapters of this dissertation. She has allowed me to independently explore my area of interest, lending a guiding hand where necessary. I would also like to thank Ronnie Miller who read my penultimate draft through “examiner’s eyes” and made many useful criticisms and observations. Thanks must also go to special members of the Linguistics department, specifically Nkonko Kamwangamalu, Stephen Cowley and Roy Dace, for their part in creating my initial interest in the processes of language and cognition, that has ultimately led to this research project.

On a more personal note, I would like to thank my parents, without whom I can honestly say this project would never have happened. I will always remember that your support and humour were what got me through the rough times. This is as much your project as it is mine.

Finally, to Graeme, whose unfailing love and support will be remembered always.

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Chapter One: Introduction

In the wake of a new political dispensation in South Africa, tertiary education has seen many changes in its approach to selection criteria, teaching and assessment. In particular, curriculum reform is high on the redress agenda and methods of transformation have been investigated that take into account the learning and teaching needs of those students who have been previously disadvantaged by the apartheid education system. These students, mostly second-language speakers of English, represent an increasingly large proportion of the students entering tertiary institutions and, as such, have been the object of much research in recent years. Much of the work that has been conducted, however, has been speculative and the task is to convert these speculations into empirical research that might pave the way for effective educational change.

In this context, equity or, rather, inequity, has become a key issue regards university access and education, largely because of the belief that students who have been disadvantaged under the old Apartheid system, are still not being given the same opportunities as students who have received better quality school education. As Miller & Bradbury (1997) point out, the standard selection criterion for tertiary education has been, and still is, the matriculation results of prospective students, suggesting that the blame for restricting access should not lie with universities, but rather with schools that fail to prepare students adequately for university education. Many studies (Van Wyk & Crawford, 1984; Potter & Jamotte, 1985; Shochet, 1986; Fridjhon & Mitchell, 1987; Mathonsi, 1988; Taylor, 1989; Agar, 1990; Griesel, 1991) have shown, however, that the overall matriculation result is not as good a reflection of student's academic abilities as was previously thought. Furthermore, an

approach that simply passes the blame to secondary schools does not solve the immediate problems of student access and success at university. Miller & Bradbury (1997) claim that a selection procedure based on matriculation results simply reflects the gross inequality inherent in the various educational systems, rather than problems with a particular set of students. Under these circumstances, new methods of selection are required that will take into account those students who have been deliberately disadvantaged.

Two issues need to be addressed if the problem of inequity is to be resolved. First, university selection procedures must satisfy the criteria of accuracy; in other words, they should be geared towards identifying those students who, regardless of past performance, have the potential to succeed at university. Second, the process of selection should be fair; that is, that it should not favour one group of students over another (Miller, 1992b). The main problem with attaining fairness and accuracy is the large degree of cultural difference that characterizes South African society, as it becomes difficult to produce a 'fair' selection test that does not favour one cultural group over another. Moreover, to the extent that a 'culture free' test could be developed, the results may be of no help at all in an institution (the university) that is socially constituted and culturally mediated. Such a test would also defeat the psychometric purpose of finding and measuring differences between individuals (Miller, 1992b). How then is it possible to assess the potential of students, while at the same time remaining fair and accurate?

Feuerstein (1979, 1980) claims that conventional testing procedures lack a distinction between cultural difference and cultural deprivation, where learners' low levels of manifest performance may be attributed to important differences in cultural exposure. Feuerstein

(1979) argues that cultural deprivation is an extreme form of alienation, where the problem is far more pervasive than the culture simply not equipping individuals with particular skills or abilities. Rather, he suggests that certain individuals/groups may be deprived to the extent that they lack the “intergenerational transmission and mediational processes” of their own culture (1979: 39). This means that such individuals may lack the requisite cognitive functions, severely limiting his/her possibilities for transferring such functions to other cultural bodies of information. On the other hand, students that display poor performance because of a disjuncture between two different cultural worlds, have the potential to overcome their difficulties because their own culture has provided them with the necessary skills for learning and acquiring the important elements of other cultures (Feuerstein, 1979). Feuerstein’s concept of cultural difference may provide reasons for why certain second-language students, for example, mother-tongue Afrikaans, and, in particular, foreign-language students, who have attended Eurocentric secondary schools, do not experience the same difficulties that students from previous Apartheid schools experience when entering university. In this sense, Apartheid has severely disrupted the usual cultural mediation for black, second-language African children and youth. University access then, should be determined by a student’s potential to perform rather than by his/her manifest ‘success’ at school, such that students who are underprepared for university because of cultural constraints, are not disregarded unfairly.

The key word in this context is ‘potential’, meaning that students who are given access to tertiary institutions because of a fairer and more accurate method of selection, require some form of intervention or follow-up assistance in order for them to reach the appropriate levels of cognitive functioning required at university. It is simply not enough to award

access to students based on their potential to succeed and to later claim that they could not make the grade when no further assistance or mediation was provided. As Bradbury (1997) points out, the closed and authoritarian approach to knowledge, which has characterized Apartheid schooling, has underprepared students for the open-ended nature of textual knowledge that they are required to engage with at university (specifically in the Humanities). As such, these students require mediation in the form of textual engagement because, while text may appear to be closed and fixed for all time, it does, in fact, open up many new possibilities of meaning beyond what is written in black and white (Ricoeur, 1981). Ong (1982) argues that literacy and textuality demand an entirely new way of thinking, such that one cannot treat written discourse simply as another form of verbal interaction. As shall be seen, this way of thinking about text proves problematic for African students from historically oral backgrounds and contexts where previous schooling has failed to adequately prepare them for the textual demands of university study.

Combined with the problems students face as readers of academic text, are the difficulties concerning the central task or form of assessment in the Humanities; namely the academic essay. The nature of this task is such that it demands a particular set of epistemic assumptions about knowledge and requires that students are able to produce the same sorts of discourse that they are engaging with as readers. Students who display an understanding of these assumptions will be able to independently identify and apply the appropriate skills and strategies required to complete the task. However, students for whom these notions remain elusive, present with a particular set of problems at university. The production of a piece of academic writing then, involves three main inter-related elements. First, it requires that the student has the appropriate language skills necessary to construct the essay itself. In

a country where there are 11 official languages, the fluency of students' English is variable and many students have difficulty expressing their ideas and opinions in a language that is not their mother tongue. Second, knowledge is required about the specific and appropriate discourse conventions that govern the way in which academics write. This has proven to be one of the most common problems among students from all undergraduate years because these rules and conventions are rarely taught or explicated. Third, a specific kind or form of cognition is required that is associated with decontextualisation, the ability to evaluate the validity of knowledge as well as the ability to plan, order, and monitor the development thoughts and ideas. The particular focus of this study is on second-language students' production of academic writing and the ways in which these linguistic and discursive demands are articulated.

In face-to-face conversation, the responsibility for mutual understanding is shared between the participants. By contrast, text requires that the writer bear all the responsibility for achieving an intelligible and accessible piece of work. Because readers cannot ask questions or seek clarification from writers, in the way that listeners can from speakers, students need to anticipate likely sources of misunderstanding such that they can account for them before they occur. This is extended to the fact that the listener's reactions in a conversation provide feedback to the speaker regarding his/her understanding, while in writing there is a complete absence of immediate feedback. In this respect, an effective writer is someone who can act "both as the presenter and the receiver of communication" (Wood, 1988: 163). Students who are able to achieve this are continually externalizing their ideas and evaluating the accuracy and accessibility of their writing. In this sense, a piece of written prose is not simply an extension of a verbal conversation, because the ideas must be sequenced and

expressed in a precise and unambiguous way. This is a particular problem for African students from an historically oral culture because they are unaccustomed to the extreme form of interiorized literacy that characterizes the task of university study. Academic writing and reading then, make novel demands on learners and involve objective and analytical ways of thinking about reality. The structural complexity of written language is dependent on the specific communicative purpose it serves, where the style and grammatical structure of a letter to a friend is distinctly different to a piece of academic writing. Similarly, the intellectual and cognitive demands involved in processing these different texts vary as well. One method of intervention that has been used to help students engage with academic text is to actively read through the text with a more competent reader who verbalises the kinds of questions a skilled reader would usually ask silently or automatically (Palinscar and Brown, 1984). This approach is in line with Vygotsky's notion of mediation or the possibilities for "learning in advance of development" (1978: 89). In this way, students can, with the help of more competent others, learn to effectively engage with text and develop the necessary cognitive skills/structures to succeed at university.

The role of language in the development of these cognitive structures can never be overestimated, whether it be the language of parents or social caregivers who initially direct a child's actions or, later in life, the internal speech that controls our mental and physical actions. In this respect, the performance of students at secondary and/or tertiary institutions may be directly related to linguistic competence and the kind of mediation that learners have received in this regard. Bernstein (1960, 1961) attempted to explain the relationship between children's school performance and their socio-economic backgrounds, in terms of the way in which they used and structured language. Bernstein argued that there were

significant differences between the way in which children from middle-class homes and working-class homes were socialized, controlled and spoken to and, further, that these variations led to different world views, attitudes and aptitudes for learning, which ultimately impacted on school performance. Bernstein's theory transcended the surface differences in children's speech and focused on the fundamental variation in language use and structure. In particular, he claimed that learners from middle-class socio-economic backgrounds were exposed, for one or a number of reasons, to an 'elaborate code' of the English language, compared to a more 'restricted code' that characterized working-class homes. A restricted code user tends to situate what is said in a here-and-now context or uses references that are shared with the listener. Participants construct meaning for one another by ostensibly pointing out (for example, 'this', 'that', 'those', etc.) or indicating non-verbally what is being referred to. This is not to suggest that elaborate code users do not use non-verbal gestures but rather that the meaning is initially established in a verbal manner before gesture is resorted to. An elaborate code user speaks in such a way that the listener need not share a physical or common context in order to understand what is being said. Bernstein (1960, 1961) argued that learners from lower economic social groups have difficulty with written text because it (text) is similar to elaborate code language, that is that it is verbally specific, precise and context independent. Consequently, learners from different social backgrounds will enter educational institutions differently prepared for the linguistic and communicative demands that they will face.

Bernstein's notions of elaborate and restricted code language share many common features with Ong's (1982) distinction between orality and literacy. Ong's (1982) theory, and his version of what critics refer to as "The Great Divide", places much significance on the

differences between oral and literate thought. His theory explores not only the distinctions between these two forms of cognition but, further, examines the transformation which many cultures undergo in their transition between them. Ong (1982) argues that this transformation has a significant psychological impact on the way people think and the expression (language production) of these thought processes. In essence, the kind of cognition that characterizes literate cultures gives rise to an elaborate code language, where users are not restricted to a particular social context but may move across time and space and decontextualize language from immediate situational reference. However, this carries limitations of its own because the linguistic, grammatical structure must compensate for the lack of immediate context and, as such, meaning is expressed largely through the use of elaborate grammatical structures, such as subordinate phrases. By contrast, oral structures are primarily pragmatic and context plays a large role in determining meaning. Furthermore, because such cultures are mostly restricted to a here-and-now context, using ostensible references to create meaning, simple grammatical structures like conjunctions are used extensively.

While Bernstein's (1960, 1961) theory was popular because it suggested that differences in performance were not due to biological differences in intelligence, his theory was also met with hostility by families and local communities because it located the blame for poor performance within the child's social environment. Bernstein's theory was developed specifically with reference to the British community, however, the ideas and premises were extended to explain differences in the educational performance of black and white students in the USA (Wood, 1988). While this has led to considerable controversy and debate, the study brought to light the gross educational inequality that characterizes many societies, be

they in first- or third-world countries. These premises can be applied to the South African educational system, where the inequality that characterised the Apartheid era has had enormous ramifications for many African youth because it has underprepared them for university study, such that they are unable to produce coherent academic writing or understand fundamental conceptual issues. Griesel (1991) claims that due to the difference in educational and social backgrounds, black, second-language students have been unfairly disadvantaged. She emphasizes the need for universities to recognize such imbalances and to employ new strategies in their selection of students such that the student population might fairly reflect "the demographics of a broader society" (1991: 1). Furthermore, Nyamapfene and Letseka (1995) argue that university selection procedures are inaccurate, in that there is a common misunderstanding that the possession of a matriculation certificate automatically implies that the student is in possession of the skills required at university. They suggest that first-year students need to be introduced to and guided into the practices of university learning and that it is an over-expectation on the part of academics to assume that these students will simply perform appropriately. While there is a common understanding among researchers and educators that intervention is required to deal with inequality and the consequences of underpreparedness, the challenge lies in its implementation.

In this regard, Badsha (1994) explores the equity policy positions with respect to student access and selection, especially within universities. She outlines three positions or access options; first, "equal access for all" (1994: 160), where access to tertiary institutions is a right of all citizens; second, "modified equal access" (Ibid), where all citizens have a right to tertiary education but are not guaranteed admission to the tertiary sector of their choice;

and third, “equal opportunities option”, where “all citizens have the right to compete on equal terms for a scarce PSE place” (Ibid). While the latter option seems to be a more realistic approach, especially with regards to the education budget, the government has the added responsibility of ensuring a ‘fair’ competition for limited places (Ramphela, 1994). This means that changes need to be made regards the medium of instruction in schools, such that English becomes gradually adopted as the main medium of instruction, and, further, that academic and language development programmes need to be implemented to address past inequality (Badsha, 1994; Ramphela, 1994). Issues such as financial access and student support systems are also on the redress agenda. In this context, the concepts of ‘open learning’ and ‘distance learning’ become important issues to consider. Open learning refers to a system of learning where people are able to learn at the time, place and pace of their choice to overcome problems such as work commitments or geographic isolation, that may restrict people from obtaining access to training (Rumble, 1986-1992). Rumble explores a range of criteria associated with ‘openness’, including access-related criteria, place and pace of study, means of study, support services, and assessment. He claims that distance education systems tend to be, by their very nature more open than contact modes of instruction because they allow students to structure their learning needs around other everyday commitments.

In this respect, new distance methods and materials are being implemented which recognize that students come from different social and educational backgrounds and do not, therefore, learn at the same pace. The Psychology I course at the University of Natal - Durban is structured around textual engagement that aims to “instantiate the task demands of university studies and to provoke students’ potential for cognitive operations which neo-

Piagetians have termed post-formal” (Bradbury, 1993: 113). It is believed that underprepared students will benefit from being ‘forced’ to engage with written text, with assistance and guidance in the form of a tutor/lecturer where necessary. According to Wood, Bruner & Ross (1976), effective intervention involves a “scaffolding process” where the tutor initially controls those aspects of the task which are beyond the students grasp, thus allowing the student to concentrate on those elements that s/he can solve. The authors argue that learning can only take place once a solution is recognized by the student himself, that is that “comprehension of the solution must precede production” (1976: 90).

The relationship between language and cognition is of extreme importance in this context because it suggests that one of the ways in which we can have access to students’ underlying cognitive processes is through their production of language. The first step to assisting underprepared students then, with the difficulties they experience with academic writing, is to gain an understanding of the kinds of errors students produce and problems they encounter when engaged with a piece of writing. If common difficulties can be identified for underprepared students in general, effective intervention and mediation can take place. With regards to academic essay writing, the most common form of assistance given to students are sideline/margin comments and remarks from tutors or lecturers. However, these forms of mediation are unlikely to contribute much towards the improvement of students’ academic writing where they are underprepared for university study. As such, a more systematic approach is needed that will be able to develop the cognitive skills that underlie the writing process. If the overarching aim of the mediational task is to enable students to mobilise the appropriate epistemic assumptions and to become “self-regulating, independent learners who can engage in new and novel problem-solving

tasks” (Bradbury, 1993: 112), then the tasks themselves must provoke learners into new and unfamiliar ways of thinking. This can only be achieved through the language (wording) of the task and the kinds of assumptions and ideas that this language leads learners to think about.

The present study is an extension of pilot research conducted in 1998, where the detailed analysis of a small group (n=9) of ESL essays revealed interesting trends in the kinds of linguistic errors made by first-year students, in different performance categories. In particular, it was found that while surface-level error analysis revealed little difference between the three groups of essays, a macro-level analysis indicated that there was broad distinction between the cohesion errors produced by second-language students in failed and first/third-class performance categories. Moreover, the results of a coherence analysis indicate a sharp disparity between the ability of students, who failed and those who passed the essay question, to initiate, develop and resolve topics/themes (Sear, 1998).

The present study aims at substantially increasing the scale of analysis and subjects a total of 119 ESL students’ essays, from four performance categories, to both micro- and macro-level analyses. In addition, in order to clearly delineate the nature of linguistic and cognitive contributions to students’ engagement with the academic task of essay writing, this research provides important comparative analyses with essays produced by English First-Language students (n=30). This research aims to provide important contributions to the understanding of underpreparedness; in particular, the study aims to identify the specific (language) areas in which ESL students struggle, with regard to academic essay writing and how these are similar to or different from the kinds of difficulties experienced by first-language students.

Furthermore, the study will provide valuable insight into the cognitive processes underlying these difficulties, that are characteristic of all underprepared students. This understanding will ultimately reflect on the kind of mediation and assistance that underprepared students require at university level.

Chapter Two: Underpreparedness and the second-language student

"You have to accept the fact that man is not simply Homo sapiens; he's Homo symbolificus - he's someone who makes symbols." *(Walker Percy)*

2.1. WHAT IS UNDERPREPAREDNESS?

With the abolition of the Apartheid education system, and the introduction of black students into previously exclusively white universities, a need arose to understand why certain students, who were granted access based on their potential for success, were performing poorly at university. While a 'second-language learner' (ESL) can refer to any person who has acquired English as a language secondary to their mother tongue, it was specifically black, second-language students who were showing signs of underpreparedness at university. It is important to emphasize that these students were, at the time, the very 'creme of the crop' exiting black high schools which, consequently, made it difficult to attribute their poor performance to laziness or to write them off as bad students. The term "underprepared" gradually became the accepted explanation for these students' poor academic performance at university, however, the nature of the term is still not fully understood. Many have argued that underpreparedness is simply a label, developed for an increasingly politically correct society, where the real issue is that certain students have had disadvantaged (educational, political and social) backgrounds. Some educators believe, however, that while underpreparedness and disadvantaged are interrelated, there are distinctions between the two that need to be made. This may be done by exploring both the denotative and connotative meanings of each term¹. Underpreparedness denotes or refers to

¹ Personal communication with R. Miller, 1999.

a level of cognition, whereby a person may be ill-prepared for university due to a disadvantaged background. The term connotes or implies, then, having being disadvantaged in some way. In contrast, being disadvantaged denotes political, educational and/or social deprivation, while the term connotes being underprepared for university study. In this way, someone who has been disadvantaged in terms of their educational opportunities will most likely (although not inevitably) be underprepared for university, because they will not have received the relevant and necessary mediation. Miller (1989) points to a further problem in this discussion, when he suggests that students from disadvantaged backgrounds may, in fact, be 'overprepared' in the sense that their old learning may impede new ways of thinking at university. This indicates that the problems that students present with may not be due to a lack or deficiency in essential information or cognitive structures, but rather that they require assistance in the 'un-learning' of previous structures, in order to create space for new learning opportunities (Miller, 1989). For the purposes of this study, however, the term underprepared includes the notion of over-preparedness, and the idea that unlearning is required before new learning can take place, as well as the notion that certain students may lack appropriate cognitive processes/functions. Moll and Slonimsky (1989) suggest that the notion of a "disadvantaged" student is simply used as a polite euphemism for "educationally oppressed black students" (1989: 162), and that the psychological conditions of such a construction have subsequently been ignored. In this way, they are drawing attention to the lack of clarity surrounding the term "disadvantaged", and claim that researchers and educators must seek to overcome the general conception of these students as necessarily suffering from a "conceptual or cognitive deficit" (1989: 162). If we are to argue then, that underpreparedness is more than being disadvantaged, we must determine the necessary and sufficient conditions for the term.

There are many different perspectives and approaches to understanding underpreparedness, each of which has taken a different stance as to the meaning of the term. The various authors who have attempted to define what it means to be underprepared have found themselves only with a working definition for their particular area of research, rather than with a definition capable of explaining underpreparedness as a whole. It would appear that underpreparedness is most generally used to describe those second-language students who perform poorly at university for, one or more of a number of reasons (Bradbury, 1993; Craig & Kernoff, 1995; Miller et al., 1998). These reasons become clearer as one examines the various perspectives that have been adopted to understanding and explaining underpreparedness.

It would seem that educators and theorists, who attempt to make sense of underpreparedness, invariably end up supporting one of three approaches to the learning problems that second-language students face at tertiary level. The most 'obvious' explanation for second-language students' difficulties is the language/linguistic argument. Many theorists and educators claim that the fact that these students are second-language speakers of English puts them at a distinct disadvantage when it comes to grasping concepts and understanding abstract ideas, as they are expected to construct knowledge through a language medium which is not their mother tongue. This language argument is strengthened by the fact that cultural knowledge is passed down over generations through the medium of language, and that it is through language that we come to know the world around us (Bradbury, 1993; Miller et al, 1998). It follows then, that for underprepared students who are second-language speakers of English, they are learning in a language which is not their own native tongue, and that such students would be successful if they were taught in their

mother tongue. Bradbury (1993), however, points out that such an 'obvious' explanation is not as clear cut as it may at first seem. She claims that there is more to underpreparedness than the language argument can explain. For example, if all student difficulties at university were simply problems with language, then the eradication of student language errors would result in success, while mother tongue speakers of English would not experience any difficulty when it came to university study (Bradbury, 1993). It seems obvious that first-language students are not excluded from the generalised difficulties of university study and, furthermore, that not all second-language students (for example, Afrikaans speaking students) experience the same difficulties with university level tasks.

Miller & Bradbury (1997) point out that although language competence is one of the determining features of university success, less emphasis is placed on mathematics, which in the natural sciences is often taken as a predictor of university success. It may not seem surprising that mathematics proficiency is not a prerequisite for access into the Humanities or Social Science faculties, however, as Miller & Bradbury (1997) point out, mathematical skills are increasingly becoming an important feature for understanding core concepts, research methods, and statistics in the Humanities subjects. When students have difficulty understanding a concept which requires a basic grasp of mathematical reasoning, the 'broad' divergence between language competence and mathematical competence becomes less distinct (Miller et al, 1998). In a study conducted to measure the comparative performance of first- and second-language students in language tasks and mathematics tasks, it was found that having English as a second-language did not directly determine being underprepared at university, but rather compounded a more fundamental cognitive problem (Miller et al, 1998). This means, then, that to the extent that proficient language and

mathematical abilities are necessary for success at a tertiary educational level, students who fall into the low competence categories could be described as underprepared, be they mother tongue speakers of English or second-language English speakers.

A second perspective on understanding underpreparedness is outlined by Moll and Slonimsky (1989). They argue that the problem disadvantaged students face is not a lack of the cognitive structures needed for university study but rather the lack of mobilisation of the cognitive skill(s) required at tertiary level. This position opposes the cognitive perspective notion that underprepared students have a 'deficit' of kind, in that they lack the cognitive structures required for university level education. Instead, it is claimed that there is a developmental process that occurs *within* the structures of abstraction or formal operations, where individual learners can be situated according to the particular cognitive skills they have developed (Moll and Slonimsky, 1989). Moll and Slonimsky define cognitive skill as the "contextually specific mobilisation of particular units of structure... which is required to complete a particular task" (1989:160), and they argue that underprepared students are those students that have not learned to access the skills required at a university level of education. They suggest that the reason for this lack of skill lies largely with the Department for Education and Training (DET) school system, where students acquired a policy of rote learning and the groundrule of "replicate what is given" (1989: 161). The suggestion that a range of rules exist for learning appears to be radically confusing to these students, along with the added obstacle that the kind of cognitive operations required from them at university are of a more demanding nature (Moll and Slonimsky, 1989).

A third, contrasting, explanation for underpreparedness is rooted in cognitive developmental

theory as conceptualised with reference to the theories of Jean Piaget and Lev Vygotsky. Bradbury (1993) suggests that this cognitive or psychological perspective has arisen largely out of the shortcomings which were recognized in the linguistic debate. She points out that "a cognitive perspective facilitated greater precision in defining more exactly what it is that underprepared (disadvantaged) students struggle with in their attempts to access university knowledge" (1993:1). While there are important differences between the various cognitive developmentalists, their theories have in common an understanding that situates action at the heart of any investigation into cognition and learning (Moll and Slonimsky, 1989). Piaget's view that intelligence is a particular form of biological adaptation requiring action, and Vygotsky's understanding that knowledge is socially constructed, both represent an approach to cognition that focuses upon a particular form of activity that produces learning. While Vygotsky (1978) located the source of this action within society and culture (significant others mediating the child), Piaget (1977) argued that action originates with the individual, who must first act upon the world before knowledge can be constructed.

In an article investigating the conceptual issues surrounding cognition, Miller (1989) explores the notion of underpreparedness in the context of Piaget's conservation theory. Miller (1989) explains that when a child fails to conserve on a Piagetian conservation task, there are a number of issues which must be taken into consideration. Failure to conserve may, first, demonstrate that the child lacks conservation knowledge, possibly due to lack of exposure to such tasks and/or second, that the child lacks the cognitive structures required for understanding the task. Consequently, we must assume that the child is in fact *not doing* a conservation task when it is set before him/her, since they are utterly unaware of the task requirements or that they have failed. In this sense, failure takes on a different meaning since

a child who is not doing a conservation task cannot fail such a task (Miller, 1989). Miller (1989) further points out that changing the task requirements, by placing a screen in front of the containers, does not produce success in conservation because it is the nature of the task which has changed and not the cognitive structure of the child. Piaget (1977) claims that before cognitive development can occur, there must be conflict or 'disequilibrium' between what is known and the new situation/information. The mind then, attempts to restore equilibrium by adjusting existing structures and accommodating new information. There appear to be two essential processes involved in changing a child's cognitive structures; first, the child must acquire the new structure for understanding and second, the child must unlearn the current structures which govern his/her understanding (Miller, 1989). As Miller points out, it is this kind of learning which presents theoretical and practical problems and which has culminated in what is known as the learning paradox. In the words of Plato,

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

Such a paradox has enormous implications for underpreparedness, since it suggests that underprepared students may not be equipped with the relevant cognitive structures necessary for university level tasks, or may be impeded by "fossils of old learning" (Miller, 1989: 158). Furthermore, it suggests that changing the task demands at university, such that underprepared students may pass, does not adequately reflect their capabilities or understanding and, in the long term, does not benefit these students. Conversely, this paradox has implications for teaching, where it is commonly held that "understanding should precede action" (Ibid. : 155), in that teachers move from the familiar to the unfamiliar in teaching new material. The problem arises in how to teach the specific

understanding before action, since the student must unlearn old rules or previous learning to make way for new, but at the same time use familiar experiences and understanding to learn unfamiliar material. Miller (1989) claims that the significance of the paradox lies not in how it explains knowledge is acquired, but rather how it is *not* acquired. It would seem then, that the reverse of the approach to teaching new material is actually true. For new understanding to be possible, action must precede understanding and a situation must be recognised as unfamiliar or contradictory before new ways of perceiving it are explored (Miller, 1989). This has important implications for a university setting because it suggests that emphasis should be placed on getting students to engage with knowledge in an active way, especially when the material appears foreign and confusing.

It becomes necessary at this point to ask the question of what cognitive processes are required and valued at university and whether intervention programmes could be implemented to teach or transfer these necessary processes to students. Moll and Slonimsky (1989) do not outline explicitly what they regard as “academic skills” but they do argue that intervention cannot simply involve an explication of the conventions/rules at university. Other theorists have suggested that it is exactly those academic conventions which need to be made explicit to students, particularly as they seem to be a collection of tacit knowledge that defies concise explanation. Connor and Johns (1990) suggest that to succeed in an academic milieu, students need to be “pragmatically competent”. This involves identifying and developing the accepted linguistic, intellectual and social conventions that define tertiary level education. This sentiment is echoed by Peirce, who argues that competence at university involves “the ability to say and to write what one means; to hear what is said and what is hidden; to defend one’s point of view; to argue... to speak, read and write with

confidence; to make one's voice heard; to read print and resist it where necessary" (1989: 411-412). The latter point refers to a cognitive process that seems to be highly valued at tertiary level; namely questioning and critical enquiry. Dillon claims that "when a student asks a question, he exhibits his present and future complex of knowledge... the dynamics of his relation to the world... These afford the particular object of pedagogical evaluation and intervention" (1986: 333). Miller further argues that asking a question involves imposing an understanding on a situation, in short "we do not ask, cannot ask, questions about matters we do not understand" (1994: 3). It seems that students, who are products of the DET education system, find the idea of questioning foreign and subscribe to the policy of accepting what is written, especially by academics who they consider their superiors.

Widdowson (1984) and Wallace (1992) examine the interaction between readers and text and suggest that a reader may take either an assertive or a submissive position to any particular text. If a reader is too submissive s/he may simply accumulate information without reconciling it with existing knowledge structures (Widdowson, 1984). Submission to a text seems to be common where readers feel they cannot assert themselves against the text, even though they may have knowledge of the topic. This points to an important aspect of text; namely the power relations that exist implicitly within it. Wallace (1992) argues that over-submission is a direct result of a particular context of learning, where the teacher and the text are regarded as 'knowing best'. This accords with what we have said about the "replicate what is given" policy of the DET educational system. Wallace (1992) emphasizes that effective critical reading does not simply involve the reverse of this situation, i.e. over-assertive readers, but rather a balance whereby the ideological assumptions of a text are challenged whilst still being open to the writer's interpretation. Furthermore, Wallace

argues that critical reading involves “a critical awareness... of what reading itself is” (1992: 61), such that readers gain a wider consideration of the reading process as a whole, which can be transferred across texts and cultural contexts. Interestingly, Wallace (1992) draws attention to the lack of critical reading skills within English Foreign Language (EFL) classrooms, in Britain. She suggests that EFL students are often marginalised as readers to the extent that they are seen as incapable of interacting appropriately with written text. Wallace suggests that a more effective approach should adopt more challenging material/text for students to engage with, methodological skills for interpreting texts and “an attempt to place reading activity and written texts in a social context” (1992: 62).

Bradbury and Griesel (1994) claim that university knowledge is essentially textual in nature and, as such, it is crucial that students have the ability to engage with and interpret text. In his work entitled “Hermeneutics and the human sciences”, Ricoeur argues that the aim of all hermeneutics is “to struggle against cultural distance and historical alienation”, such that interpretation “brings together, equalises, renders contemporary and similar” the world of the reader and the text (1981: 185). He goes on to say that this goal can only be realised if the meaning of text is actualised by a reader. Ricoeur (1981) argues that the classical problem of hermeneutics is that we do not have the ability to ask questions of a text, making meaning more difficult to achieve. This highlights an important difference between spoken and written discourse, since in text there can be no direct exchange between the reader and the author where “the reader is absent from the act of writing” and “the writer is absent from the act of reading” (1981: 146-147). This is a particular problem for students for whom literacy is not fully interiorised as they may be more accustomed to verbal engagement (Ong, 1982), where interpretation is achieved through a negotiation of meaning

between the participants.

Ricoeur (1981) argues that the interpretation of text and human action involves two key elements; namely the dialectic of distanciation and appropriation. Distanciation involves the detachment of meaning from an event (text), where we objectify thought and abstract it from the world of the actor/author (Ong, 1982), thereby creating “a critical distance in relation to reality” (Bradbury and Griesel, 1994: 325). This means that unlike spoken discourse, where the subjective intention of the speaker and the meaning of the discourse invariably overlap, an author’s intentions may not necessarily coincide with the meaning readers make of a text. Ricoeur (1981) points to three ways in which distanciation occurs; first, between the author and the text; second, between the reader and the text and; third, between the reader and the world. It is through the construction of text that a different relationship is established between the author and the world, and between the reader and the world, where new perspectives outside of their lived experience are possible (Bradbury, 1997; Bradbury and Griesel, 1994). While spoken discourse appears to directly reflect reality and experience, the words of a text are divorced from an actual identifiable context, such that it is only through interpretation that we can rescue the meaning of a text (Ricoeur, 1981). Appropriation, on the other hand, concerns the way in which we make something our own. This involves a “letting go” or a relinquishment of already existing knowledge so that one can appropriate the new meaning. Appropriation, then, can take the place of the dialogical answer in a situation (text) that does not contain ostensive references to aid interpretation. In this way, “interpretation becomes an event” (Ricoeur, 1981: 185) where the meaning lies not in what (text) is being interpreted but in the interpretation itself. In this context, the act of reading is not about arriving at the author’s meaning or intentions but

rather about readers actively constructing meaning/knowledge for themselves, by interacting with and interpreting the text. This gives readers the opportunity to expand their horizons and open up new possibilities from a text, that may or may not coincide with the author's original intentions. This idea is contrary to the commonly perceived view of text as closed and fixed by the author's words and intentions. While the text does constrain and direct the possible meanings that can be constructed by readers, it does not determine the meanings that are constructed (Bradbury, 1997).

Through the distancing created in academic text, between the world of the student and the world of the author, learners are forced to appropriate new and unfamiliar meanings and understandings. While academic text appears to be an objective discourse, which is grounded in authoritative truth, Ricoeur's (1981) understanding of text allows for a new approach to academic text because it claims that readers create their own meanings from the interpretations they make of text and are not limited to uncovering the author's intentions. Academic text is, therefore, a vital means of mediation because it provides an opportunity for learners to explore new worlds and re-presents a seemingly fixed, unchanging reality in new ways (Bradbury and Griesel, 1994). It is, therefore, important that students are taught how to interpret text effectively; especially academic text, where distancing is at its most extreme and may prove difficult to readers who hold a very different set of epistemic assumptions about textual interpretation. As mentioned, this is a particular problem for students from a historically oral culture, as they may engage with text as if it is simply another form of verbal interaction. Intervention is needed, then, that will mediate students into identifying new and unfamiliar content/form at university, such that they will approach learning in a different way and not simply apply previous methods of interpretation and

understanding. It is in this way that students are able to understand that university knowledge is not static or fixed but rather “a result of historical development”, such that “change is possible, both within students’ understanding and in the enterprise of knowledge production” (Bradbury, 1993: 113)

Swart (1995) examines the flip side of these problems, associated with students as readers of text, when she explores the role of students as writers of text. She suggests that students, in general, are not equipped for the writing skill requirements of university and argues that they lack the “metacomponents” (1995: 3) of intelligence, which includes planning, monitoring and evaluation. In particular, students show signs of parallel processing; that is, random thought processes without attention to detail. Swart (1995) says that the form of processing that should be taking place at university is serial processing, which is characterized by “systematic, step-by-step thinking and attention to detail” (1995: 3). This is similar to Strohm Kitchener’s (1983) metacognition, that involves the way in which individuals plan and monitor their own thinking and interaction with tasks/text. Craig (1991) adds that exercising these metacognitive controls involves the ability to analyse questions, that is learners must first understand what is required from them before they are able to mobilise the appropriate controls. Strohm-Kitchener (1983) proposes a “three-level model of cognitive processing” (1983: 222), in which she distinguishes between two types of problem-solving situations. The first of these, termed “puzzles” is a well structured problem, where all the features and elements are known and where there is one guaranteed, final solution. The second type of situation involves “ill-structured problems”, where there is “not a single, unequivocal solution” but rather a solution which is befitting for our current knowledge, or best suited to a particular theoretical assumption (Strohm-Kitchener, 1983:

224). Such ill-structured problem situations are the sort of tasks required in the Humanities, where the primary form of assessment is open-ended essay questions. The three level model of cognitive processing characterizes the "ability of individuals to monitor their own problem solving when engaged in ill-structured problems" (1983: 225), with each level providing the basis for the next level. Swart (1995) argues that one way of eliciting such planned thought in students is to make them draw mind maps of their essays before the writing process begins. In this way, we draw attention to the fact that the planning and execution of an essay are distinct processes that should each be afforded particular attention.

Pinard (1986) proposes a model that addresses the ability of a person to take charge of his/her own cognitive functioning. The model is based on three fundamental principles. The first principle is concerned with a person's available metacognitive knowledge with regard to 1) the variety of possible goals in a particular task, 2) the differences both within and between individuals engaged in the task, 3) the differing demands of various cognitive tasks, 4) the various cognitive strategies that one could employ to reach the required goal(s) and, 5) the *metacognitive* strategies that could be used to regulate and monitor activity during a task. The second principle of Pinard's (1986) model concerns the idea of self-regulation, or the extent to which an individual can synthesize and monitor the cognitive processes necessary, during the performance of a particular task. While these two principles, i.e. metacognitive knowledge and self-regulation, are commonly viewed as separate and distinct components, Pinard (1986) suggests that they are rooted in the same cognitive experiences. These experiences are essentially governed by the amount of cognitive attention that is given to any particular task and the extent to which the appropriate metacognitive

knowledge is activated for that task. The third and final principle to Pinard's (1986) model concerns the outcome of the task. This will ultimately serve as external feedback to the individual, confirming the internal feedback that has been made and controlling the final product. Pinard's (1986) model may suggest reasons for the apparent lack of planning or thought that characterizes underprepared student's essays. These students, it would seem, need to be taught how to monitor and regulate their own progress within a particular task, such that they learn not only about the kinds of metacognitive knowledge that is particular to university tasks but, also, the manner in which to perform these tasks successfully.

South African studies, concerning underpreparedness, seem to indicate a disjuncture metacognising the nature of the university task (epistemic assumptions), between the preparation of students by their school systems and the expectations of university. This disjuncture seems particularly evident in students who are products of the (ex) DET system. Moll and Slonimsky (1989) argue that the main difference between the two types of educational systems; namely the DET and non-DET school systems, is that of "deep-processing". This is akin, although not identical, to Strohm Kitchener's (1983) conceptualisation of epistemic cognition that involves forms of sophisticated cognitive activity associated with "levels of abstraction... self-conscious monitoring of one's own cognitive processes and... the validity and truth criteria... of knowledge" (1989: 161). The individual operates at a meta-level when solving ill-structured problems because, as Strohm-Kitchener points out, "its concern is not on 'what' " strategy is available to employ but rather on " 'whether' it is solvable" at all (1983: 226). Furthermore, if an individual explicitly understands the epistemic assumptions of academic tasks, they are able to independently select and apply the appropriate skills or strategies (first level skills) required

to solve such tasks. The development of epistemic cognition plays an extremely important role in solving ill-structured problems and "all students need to understand and appreciate the epistemic assumptions appropriate to the construction of knowledge" (Bradbury, 1993: 111). It is only through the development of epistemic level cognition that self-regulating, independent learners are created, who are able to apply the skills they have learnt to new and novel situations/tasks. Strohm Kitchener (1983) identifies two appropriate epistemic assumptions in the humanities, both of which are instantiated in text; namely contextual relativism and dialectical progression. The former assumption rests on the fact that any claim to knowledge is not fixed for all time and all contexts but rather is contextually relative to time and place. The latter assumption, dialectical progression, rejects the idea that knowledge is simply an accumulation of information and claims that knowledge progresses and develops through a series of theses and antitheses. Such is the nature of previous Apartheid schooling that DET students appear capable only of surface processing or pre-monitored thinking; that is operations such as perceiving, reading and memorising. These students appear to lack a grasp of the epistemic assumptions specific to textuality (reading and writing) and the meta control required to construct their own texts in appropriate ways.

Moll and Slonimsky's (1989) approach to underpreparedness appears to oppose the cognitive perspective at one level, while at another relies on the very developmental theories it resists as the basis for its argument. The authors claim that while Piaget's theory suggests the presence of differing cognitive structures across developmental stages, it also suggests development *within* the formal operational stage where "the way in which these formal structures are used... is not necessarily the same in all cases" (1989: 164). They argue that

underprepared students do possess the structures of abstraction but that they are simply at a different developmental level, within that structure, to prepared students. Moreover, they claim that Piaget's (1977) theory reflects positively on the plight of underprepared students since it recognizes that all adult human beings are capable of formal operational thought and abstract thinking. While this is true at one level, it must be said that the Piagetian tradition also recognizes that socio-cultural conditions play an important role in cognitive growth, such that a situation which inhibits this growth and development, may produce individuals who may not progress beyond concrete operations (Miller, 1989). It is this understanding which has led to a broader perspective of underpreparedness, which incorporates both cognitive and socio-cultural factors. The socio-cognitive approach adopts an historical viewpoint which argues that underpreparedness cannot simply be defined according to the students' cognitive functioning but that important contributing aspects of the person need to be considered as well. This position claims that underpreparedness is a direct consequence of the poor quality of education which black students were subjected to under the DET education system, during the apartheid regime. Due to the deliberate Apartheid policies that disadvantaged black people in South Africa, they were not provided with the same schooling opportunities as their white counterparts and are, as a result, distinctly disadvantaged at a tertiary level of education. While the socio-cognitive approach involves a different conceptualization of language and cognition, it should not be seen as separate and distinct from the cognitive approach. There are many areas of overlap but the difference lies in the areas which have been left unexplored by the cognitive approach - namely the socio-cultural factors. The full extent of this perspective becomes apparent within a larger discussion of the intervention and support programmes, that have been designed to address the issues with which underprepared students are presenting.

2.2. THE HISTORY OF ACADEMIC SUPPORT

Academic Support Programmes (ASP) were initially implemented in the early 1980's to address what was then considered the main "problem" of underprepared students; namely language proficiency. As such, courses were offered to second-language students in the hope that an improvement in English language skills would result in an overall improvement at university. Hubbard (1996) explores the issue of contextual support within texts and he claims that one of greatest difficulties second-language students face is mastering the extended English vocabulary expected of students at university. He identifies two types of vocabulary that are common place at university; namely technical terms and general academic terms. The results of his study confirm Cooper's (1995) findings that there is a strong correlation between vocabulary levels and academic achievement and, furthermore, that technical terms are afforded higher levels of support within text as opposed to general academic terminology, where writers assume that students are on familiar ground. Hubbard (1996) questions the validity of such an assumption and suggests that students, specifically English second-language students, would have less difficulty engaging with material if it were embedded in a clearer context, i.e. where definitions and descriptions are provided and where relations and collocations between items are made explicit. Olivier (1998) argues that the lecturing process is yet another example of a context-reduced situation that requires students to have highly developed language skills. She claims that many second-language students miss the essence of a lecture simply because they struggle to make meaning out such a context-reduced situation. Olivier (1998) argues that lecturers need to provide a more context-embedded environment for learning that enhances both language and cognitive processing. Input then, should be "negotiated and moderated" (1998:60) by lecturers and students, where interactions should involve requests for clarification,

repetition and the checking of comprehension.

Olivier's (1998) claim is strengthened by Tannen's (1982) work examining the overlap between characteristic features of written discourse and spoken discourse, using a comparative analysis of spoken and written narrative. The findings of the study suggest that characteristic features of oral discourse are also found in written discourse and, furthermore, that written prose makes use of features distinctive to spoken discourse. Tannen (1982) claims that content-focused oral genres, such as lectures and instructions, combine aspects of involvement found in everyday conversation with features of objective knowing and integration particular to written prose. This may become problematic, in the context of a lecture, where the ostensible verbal mode of interaction conceals a largely textual/literate discourse. Students need to be made aware of this such that they will not be misled into interpreting the discourse as if it were a verbal exchange but, instead, process the discourse in an objective and analytical way.

Starfield (1992) opposes the idea that academic support programmes should primarily address language issues, and she points out that those courses intended to develop linguistic ability in students did not fulfil their intended aims as students did not attend regularly and there appeared to be much resistance and low motivation among the students. Starfield (1992) suggests that the reasons for this were that the courses were optional for second-language students, had no impact on their university credits and were generally seen as an indication that they (the students) had language problems. Consequently, ASP have seen a shift in focus towards an approach that concentrates primarily on discipline specific support to the extent that where language courses are implemented, they are directly relevant to the

students' university (credit) courses.

The Teach-Test-Teach (T-T-T) research programme (1988-1995) is one such programme that signified a move away from language-based support towards a more integrated approach to educational development. It was designed to address the issue of student selection and rejected the notion that an educator's task is about fixing content in the minds of learners adopting, instead, an approach that provoked an open-ended process of learning (Bradbury and Griesel, 1994). Furthermore, the programme rejected the rationale that the learning problems which black students experience at university are typically due to 'language problems'. More specifically, it is a programme which, utilising a cognitive framework, addressed the issue of students who have had inadequate learning opportunities during their schooling, but "who have potential for academic success" (1994: 326). The T-T-T programme identified those students who have the potential to succeed at a university level through two phases. First, the programme recognised that student abilities are best understood "in action"; that is the research paradigm must incorporate the "very process of change, instead of attempting to artificially 'freeze'" the phenomena (Bradbury, 1993: 110). Second, the programme also realised that the people who are better able to recognize this are those who share the contexts from which potential students come, such that teachers and lecturers with similar disadvantaged backgrounds facilitate successful selection (Bradbury et al, 1991). The programme was, therefore, designed to follow a dynamic assessment procedure, where students' engagement with typical university learning tasks and their increasing abilities were assessed. This has meant that the programme was not simply about assessment, but about "deliberate and particular learning-teaching intervention" so as to further develop student potential (Bradbury, 1993).

The T-T-T programme's theoretical framework was based on the Vygotskian (1978) conception of the Zone of Proximal Development (ZPD), which has proven crucial to an understanding of underpreparedness. Vygotsky's (1978) theory of learning and development emphasizes the importance of using appropriate methods in looking for answers and solving problems. Vygotsky believed that the only way to understand higher mental/ cognitive processes, such as language, memory, learning, etc. was to examine the elementary processes that were combined and reformed to produce that particular higher mental function. This developmental method was revolutionary as it overcame the shortcomings of previous approaches, and proposed a dialectical understanding of the way in which human beings and the environment interrelate. Vygotsky (1978) claimed that people are not only reactive; that is they do not only react according to environmental pressures but that they also transform the world around them. Vygotsky's developmental method has three fundamental points: first, when one is analysing a higher mental process, one must pay attention to/analyse the process(es) involved, rather than analyse only the final product; second, one should attempt to understand and *explain* the process, rather than only *describe* it and third, when one is dealing with "fossilized behaviour", (by which he means behaviour which has become automatic and which does not require reflection) one should realise that outer appearances tell us little about the inner nature of the process, and we must return to their source and have an understanding of their "history" (Vygotsky, 1978). This method seems particularly important in a context where we are concerned with explaining historically disadvantaged students whose performance is merely a product, that might not be indicative of potential underlying processes.

According to Vygotsky (1978), language is the crucial component to understanding

learning and development, as it is what makes human beings quintessentially different from other animals, and makes them capable of completing complex tasks. Vygotsky (1978) claimed that one of the most fundamental features of developmental change is the way in which elementary cognitive processes/functions are integrated to form new functional learning systems, or what he termed higher psychological or cognitive functions. Higher cognitive processing is only achieved through the internalization of language and, as such, cognition is essentially discursively constituted. During the developmental stages of an individual's life, a particular point is reached where thought and language converge, such that "thought becomes verbal and speech rational" (Vygotsky, 1986: 44). Language, then, allows individuals to free themselves from the immediate constraints of their environment, such that they can plan, order, organize and monitor their own behaviour.

Vygotsky's main purpose in writing Mind in Society was to "characterize the uniquely human aspects of behaviour, and to offer hypotheses about the way these traits have been formed in the course of human history and the way they develop over an individual's lifetime" (1978: 19). His notion of mediation is of particular importance in the relationship between language and cognition, especially within a context of learning difficulties. By mediation, Vygotsky (1978) refers to the way in which children's actions and behaviour are regulated by others. Over generations, this process is constant and provides us with insight into human history, and the way in which culture and society is located within the child. This is particularly important when dealing with the learning difficulties of underprepared students, since it suggests that we cannot separate cognitive issues from the social and political contexts in which they have been formed or the language in which it is rooted. Thought is essentially the establishment of "connections between things, which are acquired

through language" (Miller, 1989: 164), and, hence, reflect relationships in society. This historical method argues that students are not simply "present beings" but that we must consider all of the aspects that have contributed to their cognitive functioning. This includes an understanding of students' socio-cultural, political and psychological histories and the extent to which they have been mediated by others.

It is through mediation, explains Vygotsky, that human learning becomes internalized to the point where one can monitor oneself and self-regulate, such that one does not need mediation and intervention from others. Language serves as one of the greatest mediating tools in a person's development as it is the means by which we come to 'think' internally and monitor our own actions. Children are initially mediated and directed by the language of significant others around them, however, these processes become internalized and inner speech becomes possible. There are different forms of mediation; the first type is direct, where people such as parents and teachers directly regulate child's behaviour through instruction; while the second type is where children are indirectly mediated, such that all of culture serves to mediate action. Indirect mediation can take a variety of forms, from (university) tasks designed to target specific cognitive functioning to the roles and regulations prescribed by social institutions. In other words, it is through the language and mediation provided by significant others, and the ways in which these meanings are inscribed in cultural tasks and practices, that a child's cognition is constructed and is a product of society. In employing his developmental approach to understanding learning and development, Vygotsky rejects traditional conditioning approaches, where development is reduced to learning, and maturational approaches, where learning is reduced to development. Instead, Vygotsky claims that the nature of the relationship between learning

and development is not limited to one being reduced to the other, but rather that each one influences and transforms the other. Vygotsky explains this relationship through the concept of the 'Zone of Proximal Development' (ZPD), which characterizes all forms of learning.

The ZPD :

"is the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (1978: 86).

In other words, the ZPD represents the difference between what a child can do on his/her own and what a child can do with help from others. This concept has important consequences for school learning because the child's level of development which is tested by IQ tests represent manifest levels of development; that is what a child knows at a particular time. Vygotsky (1978) challenges this view of development and learning, and claims that what children can do with others might be more indicative of their development than what they can do on their own. The ZPD then "characterizes mental development prospectively", while tests which concentrate on a child's actual level of development "characterizes mental development retrospectively" (1978: 86). Vygotsky's social understanding of learning and development, and in particular his theory of the ZPD, has important consequences for underpreparedness and, more specifically, for the way in which teaching programmes are designed for facilitating learning in underprepared students; because it suggests that students who cannot achieve a particular task independently, may be able to do so with mediation and guidance from tutors or lecturers. In this way, we are able to 'test' the relative potential which underprepared students exhibit instead of their manifest levels of development. The learning-teaching process then, according to Bradbury, is a process of " 'scaffolding' understanding within this zone of proximal development to enable the student to fully develop his/her potential ability" (1993: 111). The ultimate aim of academic support

programmes, such as the T-T-T programme, is to develop students who are self-regulating, independent learners who are able to monitor the development of their own learning process without mediation from others (Craig, 1991; Bradbury, 1993).

In line with these findings, there has been a recent shift (from the mid 1990's onwards) from academic support programmes to a focus on curriculum transformation, within the regular academic programme. Starfield (1996) argues that such transformation includes staff, student and curriculum development, in that simply changing the curriculum to accommodate different cultural perspectives is not enough to ensure the success of educationally disadvantaged students. Starfield argues that a curriculum is needed that will allow "students access to the fundamental ways in which disciplines structure knowledge and the genres by which this knowledge is communicated" (1996: 155). In line with these findings, text-based and learner-driven distance programs and materials have been and are currently being adopted in the Psychology department at the University of Natal - Durban, where the form and content of what is taught is undergoing change. As mentioned, the aim of such programmes is to develop self-sufficient, independent learners, however, because the nature of university knowledge is essentially textual, the intervention that students receive must be structured in such a way that learners are provoked into new and unfamiliar ways of engaging with the university level tasks. Furthermore, such intervention must take place before assessment, in order to give those students who are unfamiliar with this form of knowledge an opportunity to engage in the kind of content and form which is being assessed. Consequently, the Psychology 1 course, at the University of Natal - Durban, has been structured such that a) a conceptual base is created in the discipline, b) an awareness of overlapping boundaries between Psychology and other disciplines is created, c) the

particular epistemic nature of knowledge construction in the social sciences is explicated and, d) opportunities are provided for guided action (in the form of guides for reading and writing) and feedback through text-based tasks, with the ultimate aim of independent learning. The course makes use of two core texts which assist the students in their engagement with the subject-specific modules. The *Conceptual dictionary* and *A guide to learning* provide students with concepts particular to academic discourse and introduce students to the relationship between reading, meaning and learning (Kilfoil, 1996).

Bradbury and Griesel claim that one of the greatest challenges facing distance education is to provide this form of mediation, “in the absence of a flesh-and-blood teacher” (1994: 326). While it is commonly accepted that personal mediators are generally the best form of mediation for learners, Bradbury and Griesel (1994) point out that the information students receive in lectures is deceptively problematic because, although it may be verbally transmitted, it is largely textual in nature. This means that lectures, which are often considered familiar and comfortable by students, may produce greater problems than written text, because students are misled into engaging with the information in a conversational manner. It is crucial therefore, in the context of a lecture, that students are able to interpret text effectively and recognize the textual structure that is concealed within the verbal form of the lecture (Tannen, 1982; Bradbury and Griesel, 1994).

2.3. ORALITY VS. LITERACY

In this context, the relationship between textual and verbal engagement is crucial, since it informs the way in which mediation must take place if support programmes are to be successful in assisting underprepared students. Ong (1982) gives a clear account of this

difference between verbal and written forms of expression, in what has been termed the "Great Divide" between oral and literate cultures. More specifically, Ong (1982) argues that the transformation which many cultures have undergone, and will undergo, between orality and literacy has a significant psychological impact on the way people think, and the expression of these thought processes. With the advent of literacy came a dependency on the visual medium, rather than sound, and according to Ong a necessary "restructuring of consciousness" (1982: 78). Within an oral culture the "restriction of words to sound determines not only modes of expression but also thought processes" (1982: 33). Writing, by contrast, provides the context for generating critical skills, because comparisons across texts are possible, and people are able to examine things independently of their social contexts, such that communication becomes less embedded in social pressures.

Ong (1982) draws nine distinctions between the cognition and expression of thought in oral and literate cultures. First, he claims that oral thought and expression is "additive rather than subordinative" (1982: 37), where simple grammatical structures such as conjunctions are used more frequently in oral discourse, compared to literate societies. Second, oral thought and expression is "aggregative rather than analytic" (Ibid). While literacy rejects cumbersome clichés and adjectives, oral societies regard clusters of expressions and phrases as essential to communication. A third distinction concerns the conservative, traditionalist mindset characteristic of oral society, where knowledge of the past is reiterated to preserve conceptualized knowledge. According to Ong (1982), this mindset inhibits intellectual experimentation because people are too concerned with past knowledge to experience anything new or novel. The same criticism could be levelled at literacy, however, which freezes knowledge for all time, however, the written word does allow for new speculation

and thought because it frees the mind of retaining past knowledge. Fourth, Ong claims that thought and expression in oral cultures is “agnostically toned” (1982: 43), that is that oral cultures revolve around a world that is contentious and combative, with large descriptions of violence and name-calling. Literate expression, by contrast, tends to be detached or devoid of interactional dynamics. A further distinction made by Ong concerns the “empathetic or participatory” (Ibid: 45) nature of oral thought. Contrasting with the objective nature of literate culture, where writing sets up distinct conditions for the known and the knower, learning within an oral culture is achieved by a close identification with the known. The sixth distinction that Ong (1982) outlines concerns the homeostatic nature of oral thought, where maintaining an equilibrium between the past and present memories is essential. Past memories that bear no relevance to present real-life experiences are discarded. Written records, by contrast, allow for a collection of datable knowledge to be kept and reflected upon even though it may bear no direct relevance to modern society. Redundancy is Ong’s next feature of oral expression. He argues that “thought requires continuity” (1982: 39) and that only writing is able to establish this outside of the mind. In an oral culture, the impermanence of sound determines that once an utterance has occurred, it is lost and can never be retrieved. As a consequence, the mind must move slowly to enable focus to be given to important issues which need to be remembered (Ibid). Ong argues that repetition and redundancy are natural to speech and thought of any culture, such that the sparse, analytical thought characteristic of literacy imposes great strain on a person’s mind and psyche and it prevents it from falling into the regular, natural patterns of thought. A further dimension to the orality-literacy distinction is that of the “human lifeworld” (1982: 42), where oral thought relies on ostensible references situated in a rich context. This relates to Ong’s final distinction that oral thought and expression is

situational, while literate thought tends to be abstract. He argues that oral cultures favour using minimally abstract concepts, which have situational and operational frames of reference close to the human lifeworld. Ong's framework of distinctions between oral and literate cultures are of importance to a study of students' engagement with university tasks, because such tasks (the academic essay) demand abilities characteristic of an extreme form of literacy, which may seem foreign to many African second-language students.

Olson (1996) supports Ong's (1982) argument for a necessary difference between oral and literate cultures in concluding that learning to read and write is what makes possible the achievement of formal, logical thought, both in the individual and in the culture. This may suggest reasons why underprepared students find academic writing problematic, as the majority of underprepared students are black African students from an historically oral culture. In a critique of Ong, Street (1995) examines the theory of the "Great Divide" between orality and literacy; first by an examination of Ong's methodology, second by examining the empirical evidence upon which Ong (1982) bases his claims and last, by an exploration of some of the main theoretical issues discussed. Street (1995) does not subscribe to Ong's perspective and claims, instead, that there is no difference between the underlying cognition of oral and literate cultures but, rather, that they are grounded in different areas of life. While oral cultures seem to consistently impose situational thought to problems they encounter, literate cultures are more inclined to use abstract thinking. This cultural relativist position does not hold that one culture is more deprived than other or that one is disadvantaged when compared with another but rather claims that "the adequacy of cognitive structures and skills can only be judged with respect to the cultural conditions that construct them in the first place" (Miller, 1989: 162). In other words, cognitive growth is

culturally specific and can, thus, not be compared across social conditions.

The cultural relativist position has been severely criticised for its failure to recognize the harsh realities that black African people experienced under the apartheid regime which have had detrimental effects on their learning opportunities. Furthermore, by not permitting comparison across cultures, such a position cannot explain how change is possible as it “forces people to remain locked into their own cultural past” (Miller, 1984: 5). In a learning context, this position cannot provide universities in the “new” South Africa with a policy which can assess all students equally and fairly, because it claims that we must avoid spurious comparisons and recognize the unique methods each culture adopts to deal with situations of a similar nature. In this context, Moll and Slonimsky (1989) argue that intervention programmes are not the simple solution to the problems experienced by underprepared students at university and that, instead, educators and theorists need to address the issue of the conditions under which learning is constructed. This means that we cannot simply treat students as an isolated problem which requires fixing, but rather that we must recognize that these students have developed out of a sociological and psychological history, which needs to be understood if we are going to solve any learning problems. Bradbury (1993) claims that the demands of university tasks do not match the form and approach displayed by underprepared students from a predominantly oral culture. This is supported by Miller et al. who claim that these students “engage with these tasks as if they require a single unequivocal solution” (1998: 1). While different cultures may equip people to ‘think’ in a certain way, it should also be recognized that underprepared students, who may show difficulty mastering certain university tasks (for example, essay writing), might be skilled in other areas. A socio-cognitive approach suggests that mediation in areas where

students have been previously unmediated would be an important area for focus. It is in this context that we revert our attention back to a discussion of language and linguistic structure to consider the possibility that mediation within specific textual language systems may have an important place in facilitating the cognitive development of underprepared students.

Chapter Three: A specific language perspective (cohesion & coherence)

"Writing and rewriting are a constant search for what one is saying." (John Updike)

3.1. ACTION AND REGULATION

University tasks are commonly perceived, by students, to be tests or assessments of some kind that will ultimately reflect on their ability, or lack thereof, in a particular area. While this is true to some extent, tasks fulfil another, far more important role in university learning; namely mediation. In the same way that we may be directly mediated/instructed by other people, tasks perform an indirect form of mediation in that they can direct a student's thought processes in the absence of another person. These written tasks provoke particular actions on the part of students and create, as Bradbury and Griesel assert, "a cognitive map 'on-top-of' texts for students' own reading process" (1994: 327). In this way, it is the textual task that directs mental action and that may, particularly under conditions of distance learning, force students to face the world of text in a new and beneficial way. The success of the task lies in the kinds of actions that it is able to provoke in learners and the extent to which it is able to introduce learners to previously unexplored areas of knowledge. In this context, the epistemic demands of a task are embedded within its language and, as shall be seen, it is this language (which replaces the language of the mediator) that constrains and regulates the (mental) actions of students.

As Miller reminds us, 'action' (and the regulation thereof) does not only refer to physical movement but to any form of mental or physical activity that "changes the way a situation (task) is experienced by the person who produces the action" (1989: 156). It is only through

acting in particular ways that individuals can construct their understanding/ knowledge around a task. In this context, the central question is the source of human action. We have discussed two perspectives on this question; first, Piaget's understanding that the roots of human action lie in biology such that action can only originate with the individual who acts upon the world around him/her; second, Vygotsky's view that knowledge is socially constructed, where significant others mediate the child's actions. As Miller (1989) points out, the major limitation of the biological view of action is that while it can explain why certain actions are repeated or alternatively, not repeated, it cannot explain how or why action is produced in the first instance - a critical issue in human learning. Miller argues, then, that much of human action is located not in the person who carries out the action but "in another person who instructs and regulates the actions of the other" (1989: 156). It is precisely because human action can be regulated that the teaching-learning process is possible and new ways of being and understanding are opened up to learners. The important point to emphasize here, is the means by which our own actions and those of others are regulated; namely language. Language plays a central role in mediation and knowledge construction because it is the symbolic tool by which the actions (thought processes) of a person may be regulated and controlled, initially through significant others and later through egocentric and inner speech, where it becomes internalized to the point that a person is able to apply the cognitive skills they have learnt, from others, to solve novel problems (Vygotsky, 1986). Once we have internalized the structures of language, we are able to direct both our physical actions as well as our mental actions. As Miller argues "the effect of mediation, then, is to reduce an agent to an actor whose actions are now experienced as happenings by the Self" (1994: 1).

It is clear from our discussion that language does fulfil a critical role in the regulation of mental action and the construction of knowledge and, as such, demands attention in research regarding underpreparedness that transcends the confinement of language to a micro-level, i.e. identifying and fixing second-language students' errors. In line with this, attempts have been made to discover whether fundamental linguistic problems exist that may impact on (impede) student performance (Bradbury et al., 1989; Hubbard, 1989). Studies that have concentrated on exactly what it is that English second-language students find difficult in academic situations, have shown that some of the most essential aspects of university study, such as producing and understanding written and spoken discourse pose problems for second-language students with regard to two main factors; namely cohesion and coherence (Hubbard, 1989; Connor and Johns, 1990; Hubbard, 1994).

3.2. DEFINING AND MEASURING COHESION AND COHERENCE

Halliday and Hasan (1976) view cohesion as a semantic concept, referring to the relations existing within a text, while Enkvist defines cohesion as the "overt links on a textual surface" (1990: 14). A five-way classification model for cohesion has been developed by Halliday and Hasan (1976) that includes reference cohesion, substitution cohesion, ellipsis cohesion, conjunctive cohesion, and lexical cohesion. Different kinds of cohesion errors appear to produce different types of problems for readers, and second-language speakers of English need to be instructed such that they will not only be able "to use the cohesion system of English more accurately" but also to "develop a sense of audience" (Hubbard, 1989 : 17). Furthermore, cohesive errors are not restricted in their effect to surface-level language but also impact on the coherence of a text. While the notion of coherence eludes any straightforward definition (Hubbard, 1993), it has been more generally defined as the

quality of a text that conforms to a consistent global picture, making the text summarizable and interpretable (Connor and Johns, 1990). Coherence is an essential aspect of essay writing, as it is indicative as to whether the writer grasps the epistemic assumptions of how an argument is formulated in an essay. It is also a reflection that the writer is able to follow a logical thought pattern throughout the essay. The relationship between cohesion and coherence is crucially important because it allows for a more complex conceptualisation of what language is, linking language and cognition. More specifically, the connections between cohesion and coherence permit a more integrative approach, that transcends the classificatory analysis of language.

Wessels (1994b) examines the relationship between one particular form of cohesion, lexical cohesion, and coherence in student academic writing. The study shows that there is a broad difference in coherence across student's writing with regard to bonding and collocation of keywords. Wessels (1994a, 1994b) draws on a model of bonding proposed by Hoey, that encompasses three main features. First, a text is regarded as a "product of semantic relations holding between sentences" (1994b: 129), where sentences are viewed as distinct yet interrelated elements. Second, lexical cohesion is regarded as the most critical form of cohesion as it produces multiple relationships more often than any other cohesive tie. Third, focus is given to repetition as it is the common function of lexical cohesive devices.

Wessels' (1994a, 1994b) study found that essays that were more coherent were also more bonded and contained more instances of multiple bonding, as opposed to linear bonding, giving rise to lexical chains that were "sustained over greater distances" (1994b: 133).

Furthermore, more coherent texts also displayed greater use of collocation, where a greater variety of keywords formed links with each other, resulting in a variety of conceptual issues

around the topic being explored. Wessels (1993a, 1993b, 1994b) suggests that intervention at this level is imperative and that it could be incorporated into a content/subject-based approach, where students are taught necessary academic skills within a framework of relevant academic material.

If cohesion and coherence are as important as they appear, mediation may be required at a linguistic level to correct these sorts of errors in students' essays. With this in mind, it is surprising that at university students are rarely taught how to write a competent essay, especially as it is the most common form of assessment used in the Social Science and Humanities departments (Miller, 1996). Even more surprising, is the fact that the university lecturers, who determine the quality (and final mark) of each essay, are not taught or made aware of the key features to bear in mind when evaluating an essay, or how to provide "constructive feedback by way of informative comments" (Ibid.: 13). It is simply taken for granted, it seems, that each player, be s/he student or teacher, knows his/her particular role and how to fulfil it. In many cases, as Miller (1996, 1997) highlights, this is not the case, and the essay, which should be the student's greatest tool, serves to penalise him/her rather than aid him/her. This is particularly pertinent with regards to the coherence of a text, as this is a concept that seems to have intuitive appeal and defy explanation. How then can we mediate the skills of essay writing to students. The first possible step would be to make the "rules" of writing as concrete as possible, such that they are no longer elusive and mysterious phenomena but rather tools which can be passed on to others.

3.3. THE SKILLS OF ACADEMIC ESSAY WRITING

Miller (1996) attempts to identify the framework which university lecturers employ in

assigning marks to student essays and the extent to which different lecturers vary in their assignment of marks to essays. The findings of the study have serious implications not only for how lecturers are marking students' essays, but also for how students are going about producing the essays. Results indicate that there is a wide degree of variance across lecturers with regards to marking, although generally lecturers agree on the broad class to which an essay is assigned. There also appears to be a set of criteria regarding form/style which lecturers use when marking and evaluating essays. In particular, essays which provide too many examples are penalised, while essays which simply outline the facts are awarded higher marks.

In a follow-up article, Miller (1997) attempts to identify "the extent to which academic performance is related to students' ability to discriminate between good and bad essays, and to establish whether there are differences in this respect between English first and second-language speakers" (1997: 11). The findings of the study show that students who perform well academically, rank essays in the same order as lecturers, suggesting that they are able to use the same criteria in their evaluations. Furthermore, students who differ from lecturers, with regard to the ordering of good-bad essays, show poor academic performance, suggesting that they do not understand the requirements of the task. It was also noted that these students were mostly second-language speakers of English, suggesting that the link between first/second language and underpreparedness is crucial (Miller, 1997). Essay writing and marking, it would seem, are regulated by a set of schemes which determine the final product. Students are required to do two things. The first, relatively simple, task is to determine what the essay topic is and what it is asking for. The second task is more implicit, and requires an understanding of the set of demands which cut "across

all essay topics and prescribes or constrains the nature of the task" (1996: 13). The mark of the student appears to imply the degree to which the student and lecturer agree about the requirements of the task.

Miller, Bradbury & Wessels (1997) examine the relationship between a student's academic performance, first/second English language use, and underpreparedness, with various forms of assessment (for example; multiple-choice, essay question, etc.). The findings of the study support three main conclusions; first, that multiple-choice questions produce higher results than essay questions for both first and second language students; second, the type of essay question (be it factual, relational or conceptual) affects the variability in student marks; and third, open-ended tutorial assessment are fairly good predictors of success (Miller, Bradbury & Wessels, 1997). The authors claim that "although curriculum reform may improve the quality of performance, it does not necessarily reduce overall failure rates" (1997:70). It is possible to reduce the high first-year failure rate by eliminating challenging forms of assessment, however, this does not benefit students in later years when they are required to cope with these sort of questions. In theory, an elimination of challenging questions is equivalent to placing a screen in front of the beakers in a conservation test, in that it changes the nature of the task and does not assess the true capabilities of the person. In this regard, Miller et al. (1997) are suggesting that success is not necessarily directly correlated to a pass at university if the curriculum has simply avoided conceptually difficult forms of assessment. Rather, by introducing conceptual questions for students to tackle, a curriculum can provide the context for producing successful students that fulfil the criteria for Strohm Kitchener's (1983) epistemic cognition. The possibility that self-regulating, critical thinkers, who have the potential to succeed at university, may be born out of such a curriculum

should be recognized when the first-year failure rates are evaluated. What then are the problem areas that need to be addressed in order to produce successful university students?

Chafe coined the problem that tertiary level educators and academics face today when he claimed that "the number of individuals who ever learn to write well is impressively small" (1986: 12). But is writing well so important? Hubbard (1989) claims that it is, and that although the ability to write coherently cannot be quantified in terms of its direct relationship to academic performance, it does have a large impact on a student's performance. In a study conducted on "cohesion errors in the academic writing of second-language users of English", Hubbard (1989) attempts to establish a framework for the analysis of cohesion errors made by second-language students, "so as to throw more light on the main problem areas" (1989: 2). A secondary aim was to examine whether the type of task (essay assignment or examination answers) affected the amount of errors made by students. Hubbard (1989) analysed a set of academic essays by 15 second-language, South African, black students, as well as a set of exam answers by the same students. Using Halliday and Hasan's (1976) five-way model of cohesive categories, Hubbard (1989) identified the two most frequent categories of error; namely reference cohesion and conjunctive cohesion. Hubbard points out that the most difficult stage of any error analysis is the explanation thereof and, typically, explanations that are reached are too simplistic. With this in mind, the findings of the study, which showed that more errors are made in examination situations than on assignments, suggested that unavailable source texts and added time pressures exacerbated cohesion errors in second-language students (Hubbard, 1989). Furthermore, lexical errors were frequent problems in both texts, emphasizing problems which a limited vocabulary introduces. Reference errors were by far the most

frequent, followed by conjunctive errors. Reference cohesion occurs when the same item enters into the discourse more than once, such that certain items are tied to other items in the sentence, for example, Jo took her *dog* to the park and she threw the ball for *it*. When reference cohesion is not achieved the connections within a sentence become muddled and confused, to the extent that it becomes difficult to understand 'who did what to whom and by what means'. Conjunctive cohesion connects items with semantic relations and it is, therefore, a crucial form of connection both within and across sentences. Where this is poorly developed, the text consists of static, unlinked sentences or phrases which appear unrelated. Based on the assumption that such errors are most problematic to the reader's understanding of a text, Hubbard (1989) emphasizes the extreme importance of taking measures to eradicate such errors in student writing.

Stevenson (1994) looks at another important aspect of student writing; namely the ability of a student to distance him/herself from the object of study, to weigh up alternative options and to give an answer only after careful deliberation. He differentiates two types of linguistic modalities; namely the epistemic modality, used to express probability; and deontic modality, used to express obligation. Stevenson made two main hypotheses; first, that "less competent academic writers will use fewer modal expressions than competent academic writers" and that second, "poorer students will make more use of deontic expressions than more competent students" (1994: 96-97). The latter hypothesis was made on the general notion that the use of probability modalities is more appropriate in academic writing.

Stevenson (1994) found that all groups of students made equal use of modal expressions, and that competent writers made more frequent use of both epistemic and deontic modals than less competent writers did. He claims however that the main difference between the

less/more competent students was *the way* in which the modals were used. Stevenson's (1994) conclusion is that less competent writers do not understand the functions of modal expressions and, subsequently, need instruction in the norms of distanced academic writing. More specifically, these students need to be taught "to express opinions indirectly or to mitigate assertions" (Stevenson, 1994: 110).

3.4. ACADEMIC CONVENTIONS - HIDDEN SECRETS?

Many of the studies discussed thus far (Miller, 1996; Miller, 1997; Hubbard, 1989; Stevenson, 1994) bring to the fore the problems that academic (writing) conventions generate for students who are unaware of this implicit 'set of rules'. In particular, Stevenson's (1994) study suggests that distanced, objective writing is valued at university, while Hubbard (1989) emphasizes that developing a "sense of audience" is crucial. Although Stevenson's suggestion expresses one of the dominant views held in academic circles, it has been proposed (Ivanic and Simpson, 1992) that objective styles of writing depersonalise ideas and opinions. In accordance with this proposal, it is argued that writers should refrain from hiding behind impersonal styles of writing and take more responsibility for their ideas, such that "I" becomes an important part of academic terminology. This idea, however, has not gained a great deal of support and most academics appear to subscribe to the notion that academic writing should maintain an objective slant. Despite lack of consensus on this stylistic issue, it is evident that the process of reading and writing constitutes the self of the reader/writer in particular ways.

One of the main problems concerning engagement with text, pertains to the power relations within text or the authoritative nature of academic text in particular. Since readers do not

have the same recourse to the author that one might have in spoken discourse (Ricoeur, 1981), it is impossible to challenge the assumptions and conclusions, made by that author, directly. Rather we, as readers, must be highly aware of the directionality and ideologies that are contained within written discourse, such that we are continually questioning their validity. This is of particular importance in academic text, where distancing is at its most extreme. Sampson (1989) argues that the ideologies contained within the language of text constitute our personal identities, such that readers of text are provoked into a deconstruction of self when engaging with text. This involves unravelling the notions of identity and hierarchy that are implicit in text that inform us as readers. In academic text this is particularly pertinent as students often feel intimidated by authors who they consider their intellectual superiors. Often the ideologies within a text are hidden or implicit and we may not realise that the text influences us into accepting a particular position. As Derrida (1995) suggests, however, there is often more in what is not said than in what is said and we, as critical readers, need to be aware of the implicit assumptions that are being made.

Clark (1992) draws attention to the idea of critical language awareness, where it is argued that students need to be made aware of the specific socio-political context in which they are situated; namely the academic discourse community. It is proposed that such a community shares a set of values, beliefs and conventions which govern the roles played by respective participants and appropriate ways of learning and writing (Clark, 1992). In many instances, the roles that students are expected to fulfil are governed by a tacit collection of conventions that are rarely explicated by those who subscribe to them. As a result, students are left feeling alienated from and intimidated by the academic community, to the extent that they do not seek help in their engagement with text or written discourse. Clark (1992)

suggests there are two facets to critically exploring and understanding the notion of an academic discourse community; first, students need to be 'empowered' by gaining a knowledge of the conventions of the community and second, these students need to find emancipation by challenging academic practices and exploring alternatives from their own experiences. This is not to suggest that students should simply disregard the conventions of established institutions, but rather that they should consider the effect such conventions have on their own identity formation. Clark (1992) argues that there are certain conventions which should not be flouted; namely that arguments should always be substantiated, that arguments must be focused around the specific goals of the writer, that plagiarism is not acceptable and that recognized referencing techniques should be followed.

It would appear then, that one of the greatest challenges students face upon entering tertiary education is the need to become part of this academic community and to share in the symbolic system of meaning that governs academic writing. To succeed in this milieu, readers/students must understand their role in the process of constructing meaning from a text, where they are "participants in, and contributors to the textual world of knowledge" (Bradbury, 1997: 117). Vygotsky's (1978) notion of mediation is of particular importance in the development of competent students who are able to engage with text effectively, because it suggests a way in which students may be taught about academic conventions and how meaning is constructed in academic writing, without having to experience it in a hit-or-miss sort of fashion. More specifically, students need to be given the opportunity to interact with people who are familiar with the implicit set of rules governing academic writing, such that they (students) will be exposed to the new and unfamiliar ways of approaching knowledge. In this context, the paradox of university level education is that it aims to

broaden one's horizons, where students are expected to discover different ways of making sense of situations, while in actuality, the demand is the same focused situations of learning that the schools systems expect (Scollon & Scollon, 1984). Consequently, students need to be aware of and, where necessary, instructed in the appropriate and specific ways in which meaning is constructed at this level. This is of particular importance in a context (the Humanities), where a student's competence is judged by his/her ability to construct well-organized, coherent written discourse and it is imperative that students are given the necessary mediation and assistance to develop these skills.

Chapter Four: Methodology, Method and Analytical Frameworks

"I regard thinking and writing as twins of mental life. The study of the more expressive twin, writing, can offer insights into the psychology of thinking, the more reserved member of the pair." (R. Kellog, 1996)

4.1. METHODOLOGICAL FRAMEWORKS

4.1.1. Language and Cognition:

The methodological framework informing this study is drawn from Vygotsky's (1978) conceptualization of the relationship between language and cognition. Vygotsky claimed that knowledge/intelligence is constructed by each individual anew through interaction with significant others or their culture. As such, the source of human action does not lie with the individual but rather with cultural/social others. Vygotsky's (1978) notion of mediation is crucial to a socio-cognitive view of underpreparedness as it demonstrates the means by which accumulated cultural knowledge is passed down on to future generations. Language is the cultural/social tool which regulates the actions of a person, initially through significant others and later through egocentric and inner speech. This mediating function of language becomes internalized to a point where a person is able to apply the cognitive skills they have learnt, from others, to solve novel problems (Vygotsky 1986). Once we have internalized language, we are able to direct both our physical actions as well as our mental actions. If students have not received appropriate mediation (i.e. they have had disadvantaged backgrounds), they will be underprepared for university education. Since the development of our cognitive structures and thought processes are dependent upon language, mediation within language systems is essential.

The present study draws on this relationship between cognition and language in three ways. First, the study makes use of different levels of linguistic (language) analyses in order to gain insight into the cognitive processes underlying the production of such language. It is recognized that the linguistic processes under investigation are only products or manifest performances of the underlying processes and, as such, this study makes use of a deep, qualitative analysis in an attempt to uncover the underlying processes that are only hinted at, at a surface level. Second, the study draws on the notion of levels of mediation, such that a task can fulfil the role of a second order mediator and provide facilitation in the absence of another person (Miller, 1992a). This means that the language of a task/question can provide the facilitation students need under conditions of distance learning. Third, Vygotsky social understanding of learning and development and the notion that all action is rooted in culture and history, provides an important theoretical base from which to discuss the notion of underpreparedness and provide possible solutions to the problems of facilitating and mediating such students.

4.1.2. History, Culture and the Social person:

History enters into this research process in two distinct ways. First, it concerns the events and circumstances that have taken place that have ultimately impacted on and created a condition of underpreparedness that is apparent in South African universities. The cognitive (knowledge constructing) processes that are being researched/ investigated have unfolded over time and have been affected by larger historical social structures. As Denzin puts it, “this structure shapes, influences, and constrains the processes under investigation” (1989: 28). This larger socio-cultural, historical structure includes language, in its micro and macro forms, as well as the cultural meanings that shape our everyday interaction and social

experiences. The second way in which history enters into this research, concerns the personal and individual histories that every individual brings with them to a situation, that have influenced and shaped the processes under examination. This includes the present researcher/author, whose personal history may effect the interpretive process. Denzin argues that these forms of history must be accounted for in any interpretive study and claims that all too often research designs ignore “the temporal and historical dimensions of the phenomenon being interpreted” (1989: 29). In short, there can be no present without past and the possibilities of the future are always directed and constrained by a social history (Bradbury, 1993). Humans as social beings, are always defined by their social world and the historical events (both macro and micro/individual) that have shaped them.

4.1.3. Quantitative vs. Qualitative methods:

Selecting appropriate research methods is one of the crucial components in any research and while the choice of method may seem limitless, there appears to be a tendency towards adopting an either/or approach, where research is categorized as either fulfilling a quantitative or a qualitative role. Those researchers who adopt one method, at the expense of the other, generally regard the other as deficient or inadequate in some way. Among the many criticisms lodged against qualitative research is that it is imprecise, biased on the part of the researcher and/or does not fulfil the “essential criteria” of prediction and generalization to the greater population.

Morrow (1994) argues that this misconception surrounding research methods is a direct result of the false dichotomy that has been set up between quantitative and qualitative analysis, where each of these methods is reciprocally defined by the other. Definitions of

qualitative research methods seem to rely heavily on explicating its 'non-features', rather than outlining specific and distinctive features or characteristics. To illustrate, in examples cited by Morrow, qualitative analysis is defined as "analysis which is not based on precise measurement and quantitative claims", while another claims that "quantitative research involves numerical analysis, whereas qualitative does not" (1994: 203). In each of these definitions it is clear that qualitative research methods are defined as an absence of quantitative analysis. This lack of clarity surrounding what it is exactly that qualitative research involves, sets up a false dichotomy between the two types of method, where quantitative analysis assumes a dominant and more credible position. Morrow (1994) claims that this can be overcome, by a careful explication of the features distinctive to each method. In this regard, he outlines three characteristic features of qualitative methods; namely case study design, interpretation of action and 'thick description'.

While it is important to recognize the distinctive analytic strategies that each method adopts, Morrow (1994) claims that nothing about qualitative procedures precludes the use of quantitative methods and that these methods can be and are, in fact, used in conjunction with each other. The present study supports this approach to research method and makes use of both quantitative and qualitative analysis to identify and explain the trends within the data. While quantitative analysis is the conventional method adopted in analytical research of this kind, and while it was used in the present study for indicating the sorts of errors that underprepared students produce as well as the degree to which students in different performance categories produce errors (i.e. content analysis), the extent to which such analysis can uncover the meaning implicit within the data is limited (particularly with regard to the discussion above concerning history and culture). For this reason, this study draws on

a qualitative approach to analysing data that will allow for more meaningful interpretations and suggest possible explanations for the trends observed in a micro-level (quantitative) analysis. As mentioned, a qualitative approach allows for a “thick description” (Morrow, 1994; Denzin, 1989) of the data, where underlying or implicit meanings can be uncovered and explained. Denzin (1989) claims that thick description and interpretation attempts to rescue the meaning of an experience by operating at a surface and a deep level of interpretation, through an examination of both micro- and macro- levels of analysis.

In addition, this study also adopts an intensive research design, as opposed to an extensive, quantitatively based approach, (Morrow, 1994), where a small number of cases have been selected and considered using a large number of individual properties. Yin defines research design as “the logical sequence that connects the empirical data to a study’s initial research questions and, ultimately to its conclusions” (1984: 29). Intensive research designs allow the researcher to explain the causal processes and meaning structures involved in a limited number of cases, without requiring large samples of data. In intensive research design, each case resemble others of that type which allows for the explication of the individual cases as well as for comparative generalizations within and between types of cases. As Morrow explains “one cannot even begin to describe a ‘case’ without a sense of ‘types’ of cases and their shared properties” (1994: 252). In the present study, this comparative method will be used to compare different language groups (types) and will involve a search for a) shared characteristics across distinctively different groups, for example, English Second-Language (ESL) and English First-Language students, and b) different outcomes across similar cases, for example, English Foreign-Language (EFL) and ESL students. As mentioned, intensive research design involves largely (although not exclusively) the use of qualitative research

methods and the present study will adopt discourse analysis as its primary method of macro-level analysis.

4.1.4. Discourse analysis:

Discourse analysis is one of the most popular qualitative methods employed when seeking to unravel and interpret the meaning of text, however, as Meinhof points out, its object of analysis (discourse) has become one of the “most widely and often confusingly used terms... without a clearly definable single unifying concept” (1993: 161). Morrow (1994) makes a distinction between narrative as discourse and discourse itself. He claims that narrative makes a crucial distinction between “invisible narratives as cognitive processes” (1994: 260) and written forms of narrative (texts). While textual narrative may be analysed and explained, cognitive narratives can only be partially observed in the context of interaction, where human action may be interpreted in a similar same way to text (Ricoeur, 1981). In contrast, discourse refers to the unity of sentences that produce a global meaning that is more than merely the sum of the sentences that constitute it. In this sense, discourse analysis is about defining and analysing textual units with a broader framework in mind. Fairclough has provided a synthesis to the methodology of discourse analysis by proposing a three-dimensional model, where any instance of discourse;

is seen as being simultaneously a piece of text, an instance of discursive practice, and an instance of social practice. The ‘text’ dimension attends to language analysis of texts. The ‘discursive practice’ dimension... specifies the nature of the processes of text production and interpretation... The ‘social practice’ dimension attends to issues of concern in social analysis such as institutional and organizational circumstances of the discursive event and how that shapes the nature of the discursive practice (1992: 4)

The present study, then, is interested in the cognitive processes that underlie the production of language in underprepared students’ academic essays. Since it is not possible to have

access to these processes while they are occurring, this study makes use of a manifest product of these processes; namely the academic essay. Using discourse analysis, a macro-level investigation of the text students' produce can hint at the structures and processes that generate the final performance and can ultimately provide reasons for the difficulties that underprepared students' experience with academic essay writing. Furthermore, if we accept Vygotsky's (1978) understanding of the Zone of Proximal Development, we must accept that the appropriate cognitive processes for university learning can be mediated to individuals, such that the development of underprepared students can be facilitated.

4.1.5. Key Research Questions:

The main objective of the present study was to gain a broader understanding of underpreparedness, with respect to the kinds of difficulties that underprepared students experience in academic writing. This was achieved firstly, by investigating the general characteristics that English second-language students' (ESL) display in their academic essays. Common difficulties were then identified across the ESL essays, that might suggest underlying cognitive processes common to underprepared students. English first-language essays were also examined for difficulties with academic essay writing, with the aim of identifying similar and/or different difficulties to the ESL students. The aim of such comparative research was to ask whether the differences (if any) between the difficulties displayed by ESL students and first-language students indicate anything significant about underpreparedness?

4.2. METHOD

4.2.1. Essays/Subjects:

Two broad categories of essays were initially identified; namely second-language and first-language students' essays. All second-language essays (n=119) and a representative sample of first-language (n=30) essays were selected, according to four performance categories; over 70%, between 65% and 50%, between 45% and 35% and below 30%. The ESL group consisted mainly of African second-language students (n=100), whose mother tongue was one of the eleven official African languages in South Africa. Three smaller language sub-groups were also identified within the ESL category, namely European foreign-language (n=6), African foreign-language (n=9) and Afrikaans second-language (n=4). The results of these analyses were included as they may be indicative of potentially informative differences or similarities across different second-language groups. Essays were selected from the first set of examinations for the year, from the total population of first-year psychology students in the 1998 Psychology I class, at the University of Natal - Durban.

4.2.2. Procedure:

The comments and names were removed from the second-language essays and they were typed and printed. Each essay was assigned a rank identification number according to its final mark, ranging from one (being the highest) to 119 (being the lowest). This process was repeated for the 30 English first-language essays.

The essays were initially examined by means of a basic error analysis. A surface strategy taxonomy (Dulay et al., 1982) and a linguistic classification of errors were combined and used for this analysis. As the aim of this study was not to provide specific linguistic

explanations for the sources of errors, the taxonomies which were adopted were not finely discriminating in their categories. The intention was to gain a broad understanding of the frequency and types of errors that second-language students produce in their academic writing. Furthermore, the intention was to identify any substantial differences or similarities between the performance groups that might suggest reasons for their obvious mark disparity.

Once a basic error analysis had been conducted, the essays were examined for difficulties with cohesive ties. A five-way classification model (Halliday and Hasan, 1976) was used to identify problems with cohesion, both within and across the four performance groups. The results of the cohesion error analysis were also used in a more global (macro-level) examination of the inter-relationships within the students' essays, together with a modified form of discourse analysis, that sought to identify 'how' ideas and concepts were expressed as opposed to 'what' was expressed. A coherence scale, ranging from one (poor coherence) to five (excellent coherence), was developed to facilitate the macro-level analysis and was rated according to the degree to which essays initiated, developed and resolved the main themes of the essay.

Once the second-language students' essays had been analysed, the first-language students' essays were subjected to the same process of analyses. The results for each individual student, in each language group, were tabled (refer to appendix 1) and the groups were compared to identify any distinct similarities and/or differences in the errors made.

4.3. ANALYTICAL FRAMEWORKS

The analytical frameworks adopted in this research included both micro- and macro-levels of inquiry. The purpose of the micro-level analysis was to establish the frequency and types of errors made by second-language students and to look for trends, in relation to the four performance categories. These results were also used in a comparison of the types and frequency of errors made by first-language students. While the micro-level analysis remained largely at an intra-sentential level, the means by which a writer relates and arranges meaning in essay writing is through the use macro structural relationships.

Therefore, the present study aimed at developing an understanding of macro-level relations in student writing, through the use of cohesion and coherence analyses. An examination of these distinct levels of language analyses helped to clearly delineate the areas of difficulty that second-language students experience as opposed to other language groups. Further, the analyses revealed connections and transitions between these levels, that is, how micro-level issues may impact on and contribute to macro-level problems.

4.3.1. Basic Error Analysis:

One of the key methodological problems/limitations with error analysis is that it can only provide a partial picture of the difficulties experienced by students because the analysis focuses only on part of the language that second-language learners produce, i.e. the idiosyncratic forms. Secondly, error analysis examines language difficulties at a particular point in time and cannot, therefore, cast much light on the developmental route that learners take or account for lapses that may occur (Ellis, 1994). Furthermore, there is a lack of clarity concerning the effect such errors have on the readers of the text, where academics either claim that they do not take account of these errors or that they are distracted by them.

However, such limitations do not rule out the effectiveness of using error analysis altogether and, it must be said that in conjunction with other forms of analysis, error analysis may point to important areas where second-language students require instruction or mediation. As such, the analysis undertaken in the present study offers a way of showing whether or not the errors produced by second-language students contribute to a generally perceived competence.

In the present study, error analysis was used as a micro-level language analysis to identify trends across second-language students' essays, as well as comparatively to identify differences and/or similarities between the frequency and types of errors produced by second- and first-language students. The present study combined a standard linguistic classification of errors with a surface strategy taxonomy (Dulay, Burt and Krashen, 1982) as a basic error analysis. A surface strategy taxonomy is divided into four categories and 'highlights the ways surface structures are altered' (1982: 150). Dulay et al. (1982) claim that a surface strategy approach provides a valuable indication of the cognitive processes that underlie the learner's reconstruction of the second-language. Ellis (1994) argues that this is a doubtful claim, however, because it assumes that learners operate on a surface structure level when engaging with a target language, rather than creating their own unique structures. As mentioned, a surface strategy taxonomy is divided into four categories; namely omission, addition, misformation and misordering. Omission concerns "the absence of an item(s) that must appear in a well-formed utterance" (Dulay et al., (1982); for example, 'He _ eating', while addition refers to "the presence of an item which must not appear in a well-formed utterance" (Dulay et al., 1982); for example, 'She has got so much of hair'. Misformation occurs when the wrong form of a morpheme or structure is used; for

example, “The cat ated the mouse”, while misordering refers to “the incorrect placement of a morpheme or group of morphemes in an utterance” (Dulay et al., 1982); for example, “Where mommy is going?”.

The linguistic classification of errors were contained under the four surface strategy taxonomy categories, viz. omission, addition, misformation, and misordering. In the category of ‘omission’ the following linguistic classifications were included:

omission: whole words/phrases/clauses have been omitted from a sentence.

ellipsis: incorrect information has been elided.

reference: absence of an obligatory referent or referee.

determiner: absence of a determiner where one is required.

Similarly, the following linguistic errors were included under the broader category of ‘addition’:

redundancy: information has been included that is not required or is repetitive.

circumlocution: long clauses have been used to explain one/two words.

anaphoric reference: a reference (pronoun) has been used that is not required.

The category of ‘misformation’ included the following linguistic items:

tense (+ copula): incorrect movement between tenses.

word form: the incorrect form of a word has been used.

determiner: the incorrect determiner for the noun has been used.

concord: incorrect subject-verb agreement (gender, number, etc.).

relatives: incorrect relative pronoun before relative clause.

lexis: incorrect vocabulary.

split infinitive: splitting of an infinitive verb.

preposition: incorrect preposition has been used.

while the category of ‘misordering’ combined:

word order: words/phrases/clauses in a sentence were sequenced incorrectly.

punctuation: incorrect punctuation has used both within and across sentences.

conjunction: conjunctive ties used incorrectly.

This combination of a surface strategy taxonomy and a linguistic classification of errors provided the opportunity to compare different language groups’ types and frequency of errors, without having an overwhelming number of categories with which to contend.

4.3.2. Cohesion Analysis:

Halliday and Hasan (1976) address one of the most prominent concerns of contemporary linguistics; namely cohesion. They define cohesion as what “occurs when the interpretation of some element in the discourse is dependent on that of another. The one presupposes the other, in the sense that it cannot be effectively decoded except by recourse to it” (1976: 4).

This means that elements in a discourse form cohesive ties with one another when they are connected either within or across sentences. In this sense, cohesion operates not only at a sentential level but also at an inter-sentential level. For example, in sentence [1] below the items Jo-Anne and her form cohesive links with one another, while in the following two sentences [2] the items Jo-Anne, her, her and she all form links with each other.

Furthermore, in [2], slower links back to Porsche (the Golf is being compared to the Porsche) and there links back to Durban.

[1] Jo-Anne bought her Porsche in Durban.

[2] Jo-Anne drove her Porsche to Durban. On her way there, she overtook a slower Golf.

Halliday and Hasan's main concern is with cohesive ties that form links across sentences because the reader can no longer rely on the structural relations within the sentence to correlate items. In addition, it is at this inter-sentential level that the cohesive tie fulfils a very important text-building role and it is for this reason that Halliday and Hasan (1976) select the orthographic sentence as their textual unit of analysis. They propose a five way classification system for cohesion analysis, including reference cohesion, ellipsis cohesion, substitution cohesion, lexical cohesion and conjunctive cohesion. Reference cohesion "occurs when certain types of items form links with other items in such a way that the same thing enters into the discourse a second time" (Hubbard, 1989: 5). These cohesive ties may be divided into a) pronominal, b) demonstrative, and c) comparative. Ellipsis cohesion occurs when there is a substitution of meaning by zero. Substitution cohesion refers to the situation when "the presupposing item has the same meaning as the presupposed one(s), but not the same reference" (Hubbard, 1989: 5). This may be used in 2 ways; a) nominal, and b) verbal. Lexical cohesion refers to cohesion by the selection of vocabulary. This may take the form of a) synonymy, b) hyponymy, or c) collocation (Halliday and Hasan, 1976). Lastly, conjunctive cohesion occurs when items that express a semantic relation specify the way in which what is to follow is connected to what has gone before. Four basic classes of conjunctives were identified by Halliday and Hasan (1976); namely additive, adversative, causal, and temporal.

There are, however, limitations with Halliday and Hasan's (1976) choice of the orthographic sentence as their basic textual unit. Hubbard (1989) points out that such a textual unit is problematic because it forces the analyst to ignore a certain instance of

cohesion (for example, the conjunctive 'so') in one sentence [3] while accepting it another [4], despite the fact that it fulfils an equal role in both sentences.

[3] Sheila forgot her bag, so she returned home for it.

[4] Sheila forgot her bag. So she returned home for it.

Hubbard (1989) outlines other forms of textual units that have been used by researchers, including the proposition, the T-unit (Hunt, 1965), the clause and the functional unit or F-unit (Lieber, 1981). The present study supports Hubbard's (1989) claim that the F-unit is the most satisfactory unit for analysing students' written discourse such that, for the purposes of this study, cohesion was defined as cohesive ties that form links across F-units and not sentences. F-units include clauses as well as certain phrasal structures that are functionally equivalent to clauses because they "serve identifiable rhetorical functions in the development of a discourse (Lieber, 1981: 58).

4.3.3. Coherence Analysis:

Because cohesive errors are not restrictive but have the capacity to affect the coherence of a text, the macrostructure analysis of this study has examined both the cohesive ties within the texts as well as the overall coherence of the texts. As mentioned, a qualitative analysis (discourse analysis) examining the coherence of students' essays was undertaken to identify the way in which second-language, first-language and foreign-language students developed and tracked themes within their essay writing. To assist this analysis, a framework, adopted from Bradbury et al.'s (1989) study, was used to analyse students' essays, according to the degree to which they: 1) initiated and introduced topics and themes, 2) developed topics/themes - both conceptually and with reference to an example, and 3) integrated and resolved topics.

A scale (ranging from 1-5) was developed to attempt to classify the qualitative results of the coherence in students' essays, such that more succinct comparisons could be made both across performance categories and language groups. Essays may score half marks on this scale, where they appear to fulfil only certain criteria from each score category. This was done as follows,

Essays that score 5/5 : The essay is coherent and logical. The main essay topic is initiated and resolved and there is an integration of the sub-topics. There is very good development of and discussion around the relevant sub-topics and there is the use of an appropriate example to illustrate the conceptual principles explained.

Essays that score 4/5 : The essay demonstrates logical thought and structure. It should provide an introduction to the essay topic but may not resolve the essay topic on completion. There is good development of the conceptual principles (sub-topics), although these may not be integrated with the main topic on completion. There is good use of the example to illustrate the concepts discussed.

Essays that score 3/5 : Average coherence to the essays. The essay may provide a brief introduction but fails to integrate sub-topics or to resolve the main essay topic. Shows adequate structure and development of the sub-topics and covers the relevant conceptual principles/information, although these may be embedded within the example.

Essays that score 2/5 : Weak coherence, with a brief, unstructured development of the sub-topics. May attempt an introduction (although unlikely) but fails to integrate the sub-topics or resolve the essay topic. An over reliance on the example with only a brief mention of the conceptual principles involved.

Essays that score 1/5 : Very poor coherence, at times illogical and ill-structured.

Fails to initiate and resolve main essay topic or sub-topics. Does not explain or develop the conceptual principles in any detail. Relies almost entirely on explaining the example.

Chapter 5: Results

The results of the present study are presented in three sections based on the three levels of analyses that were conducted. The first section deals with the results of a basic error analysis, while the second section contains the results of a cohesion analysis. Finally, the results of a coherence analysis are presented. Extracts from students' essays have been included to illustrate the qualitative analysis that was carried out in identifying cohesion and coherence errors and to allow for further elaboration of the quantitative patterns presented in the tables. In each of the three sections, the results are presented; first, for All Essays; second, for English First-Language essays; third, for English Second-Language (ESL) essays, and finally, for the focus group of African Second-Language (ASL) essays. Comparative analyses across language groups are also provided.

Aside from the group of 100 African second-language students, three language sub-groups were identified within the English second-language group, namely European foreign-language (EFL), African foreign-language (AFL), and Afrikaans second-language. These language groups were distinguished because they displayed distinctive trends that may point out the specific contributions of South African schooling to the cognitive processes under investigation. While it is recognized that the number of essays constituting the three sub-groups are not large enough to allow any definite conclusions to be reached, the results do offer the opportunity to identify potentially informative and important differences and similarities across different second-language groups.

5.1. Error Analysis:

The results of a basic error analysis for each language group are summarized and presented in Tables 4a and 4b that follow, as well as in Tables 7a and 7b¹ in Appendix 2. The tables were compiled in the following way. First, each language group was divided into the four performance categories; over 70%, between 65% and 50%, between 45% and 35% and below 30%. Second, the number of essays (n) and the average number of errors per essay for each performance category (AVE.) were calculated and tabled. The overall range of errors for each performance category, in each language group, was also provided. Third, for each of four error types namely, Omission errors, Addition errors, Misformation errors, and Misordering errors, the total number of errors (Tot.), average number of errors per essay (Ave.) and percentage (%) of total errors, for each performance category in each language group, were calculated. The final column represents the Total number of Errors for each performance group, in each language group, across all types of errors.

The results for the error analysis for All Essays, English First-Language, and English Second-Language Essays are presented in Table 4a, below. Table 4b, below, represents the results for the error analysis for African Second-Language Essays.

There were a total of 149 essays which included 42 essays over 70%, 41 essays between 65% and 50%, 37 essays between 45% and 35%, and 29 essays below 30%. The overall average number of errors for All Essays was 41.4 errors per essay, ranging from 11 errors per essay to 73 errors per essay. The overall average number of errors for each performance category does

¹ Tables 7a and 7b (in Appendix 2) represent the error analysis results for the three language subgroups; EFL, AFL, and Afrikaans Second-Language.

Table 4a: Results of an Error Analysis for All Essays, English First-Language and English Second-Language Essays

Language Group	Performance category	n	AVE.	Range	Omission			Addition			Misformation			Misordering			Total Errors
					Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	
ALL ESSAYS	Total	149	41.4	11-73	1009	6.8	16	502	3.4	8	2301	15.4	37	2355	15.8	39	6167
	Over 70%	42	31.3	11-50	194	4.6	15	88	2.1	7	437	10.4	33	596	14.2	45	1315
	<65% and >50%	41	38	11-68	263	6.4	17	115	2.8	7	579	14.1	37	601	14.7	39	1558
	<45% and >35%	37	47.7	11-73	319	8.6	18	151	4.1	9	663	17.9	38	633	17.1	36	1766
	below 30%	29	52.7	17-70	233	8.0	15	148	5.1	10	622	21.4	41	525	18.1	34	1528
ENGLISH FIRST-LANGUAGE	Total	30	18.6	11-26	72	2.4	13	29	0.96	5	152	5.1	27	304	10.1	55	557
	over 70%	11	17.8	11-24	19	1.7	10	10	0.9	5	56	5.1	29	111	10.1	57	196
	<65% and >50%	12	18.3	11-26	29	2.4	13	12	1	5	64	4.7	29	114	9.5	52	219
	<45% and >35%	5	20.4	11-24	19	3.8	19	5	1	5	25	5	25	53	10.6	52	102
	below 30%	2	20	17-23	5	2.5	13	2	1	5	7	3.5	18	26	13	65	40
ENGLISH SECOND-LANGUAGE (ESL)	Total	119	47.1	18-73	937	7.9	17	473	4	8	2149	18.1	38	2051	17.2	37	5610
	Over 70%	31	36.1	18-50	175	5.6	16	78	2.5	7	381	12.3	34	485	15.6	43	1119
	<65% and >50%	29	46.2	23-68	234	8.1	17	103	3.6	8	515	17.8	38	487	16.8	37	1339
	<45% and >35%	32	52	30-73	300	9.4	18	146	4.6	9	638	19.9	38	580	18.1	35	1664
	below 30%	27	55.1	30-70	228	8.4	15	146	5.4	10	615	22.8	41	499	18.5	34	1488

Table 4b: Results of an Error Analysis for African Second-Language Essays

Language Group	Performance category	n	AVE.	Range	Omission			Addition			Misformation			Misordering			Total Errors
					Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	
AFRICAN SECOND-LANGUAGE (ASL)	Total	100	49.1	25-73	822	8.2	17	434	4.3	9	1889	18.9	38	1769	17.7	36	4914
	over 70%	25	38.2	25-50	151	6	16	69	2.8	7	337	13.5	35	399	15.9	42	956
	<65% and >50%	25	48	33-68	212	8.5	18	96	3.8	8	464	18.6	39	430	17.2	36	1202
	<45% and >35%	25	53.8	39-73	242	9.7	18	128	5.1	10	511	20.4	38	463	18.5	34	1344
	below 30%	25	56.5	39-70	217	8.7	15	141	5.6	10	577	23.1	41	477	19.1	34	1412

seem to suggest that performance may be related to the frequency of errors within students' essays, although the range of errors for each performance group does not indicate any distinctive differences. For each type of error, performance seemed to be related to error frequency, with the highest performance category displaying the lowest average number of errors in each case. There were differences with regard to the type of errors produced, with the first and second performance groups (i.e. essays that passed) producing a greater frequency of misordering errors than any other type of error, while misformation errors constituted the greatest proportion of the third and fourth performance (i.e. essays that failed) groups' totals. With the exception of omission errors, the lowest performance category produced the highest average number of errors for each error type. Furthermore, in three out of four types of error, the lowest performance group produced almost double the average number of errors displayed by the first performance group. While the data from All Essays appear to suggest that the performance of students may be related to the type and frequency of errors made, interesting patterns were identified within the specific language groups of English first-language and English second-language that may suggest a different conclusion.

Within the English First-Language Group:

English first-language students (n=30) produced, on average, 18.6 overall errors per essay and the number of errors across performance categories ranged from 11-26 errors. On the whole, this language group produced more misordering errors (55% of 557 total first-language errors) than any other type of error, with an average number of 10.1 errors of this type per essay. With respect to the frequency of misordering errors, there did not appear to be any consistent pattern across the four performance groups and there was little difference in the average number of errors produced. Misformation errors were the next most common type of

error for English first-language students, with an overall average of 5.1 errors per essay.

Performance seemed to be related to the average number of misformation errors produced by students, where the first and second group displayed a slightly larger percentage of these errors compared with the third and fourth group (29% and 28% compared with 25% and 18%, respectively). With the exception of misordering errors, the fourth performance group did not differ substantially from the other three groups and, in some cases, even produced fewer errors than other performance groups. In other words, the data for this language group suggest that the performance of students is not affected or determined by the type or frequency of micro-level errors that they produce.

Within the English Second-Language Group:

Second-language students (n=119) produced 47.1 errors per essay, with an overall range of 18 to 73 errors per essay. There appeared to be an inverse relationship between performance and the average number of overall errors, where the number of errors increased marginally with a decrease in performance category. However, while the range of errors for the first performance category (18-50) was smaller than any of the other performance groups, the four groups did not differ substantially from one another. With respect to the types and frequency of errors made, it appeared that all second-language students struggled most with misformation errors than any other type of error, where these errors constituted 38% of total (5610) ESL errors. Students in this language group produced on average 18.1 misformation errors per essay, with the ESL essays scoring over 70% yielding less misformation errors, on average, than the other three performance groups. Furthermore, there was a distinctive relationship between the number of misformation errors made and the performance category (mark) of each ESL student, with the number of misformation errors per essay increasing as performance decreased. Misordering

errors followed misformation errors as the next most common type of error made by ESL students, constituting 37% of total errors, with an average 17.2 misordering errors per essay. There did not appear to be a substantial difference between the average number of misordering errors produced by different performance groups, although there was a pattern of increasing misordering error as the performance category decreased. An interesting difference was found between the first performance group and the other three performance groups, with respect to misformation and misordering errors. It appeared that while the second, third and fourth performance groups adhered to the overall trend of producing more misformation errors than misordering errors, the first performance category produced more misordering errors than misformation errors (43% compared with 34% of total errors, respectively). The data from the ESL group would seem to suggest then, that performance is only related to error type and frequency at the very top end of the performance categories. Differences with respect to error type and frequency across the other three performance groups are minimal.

The greatest proportion of English second-language students were African second-language, i.e. their mother-tongue is one of the official African languages spoken in South Africa. The ASL group constitutes 100 of the 119 ESL essays and, as a result, this group (ASL) closely resembles the trends of the larger group (refer to Table 4a and 4b). In general, ASL students produced more misformation errors than misordering errors (38% compared with 36% of total errors, respectively), with the exception of the first performance group which displayed more misordering errors than misformation errors (42% compared with 35% of total errors, respectively). However, while the first performance group produced more misordering errors than any other type of error, this group still displayed, on average, fewer misordering errors than any of the other three performance groups (an average of 15.9 errors per essay compared

with 17.2, 18.5 and 19.1 errors per essay, respectively). There appeared to be a consistent pattern across error types, where the frequency of surface-level errors increased as students' performance decreased. The exception to this pattern was omission errors, where the lowest performance category did not produce the highest average number of errors.

A Comparative Analysis:

The error analysis data point to interesting differences between the ASL and English first-language groups. Compared with ASL students, English first-language students produced substantially fewer overall errors (an average of 49.1 errors compared with 18.6 errors, respectively) and a considerably smaller range of errors (11-26 compared with 25-73). While ASL students in general, appeared to struggle most with misformation errors, first-language students displayed more problems with misordering. The exception to this pattern were the ASL essays in the first performance group, which displayed a similar pattern to that of the English first-language group. While a greater proportion of the errors in English first-language essays were misordering errors (55% of total errors), compared to ASL essays (36%), the average number of first-language misordering errors was still substantially lower than the average number of misordering errors produced by ASL students (10.1 compared with 17.7 errors per essay). The most prominent difference between the two language groups is the average number of misformation errors produced, with ASL students yielding an average of 18.9 errors per essay compared with an average of 5.1 errors produced by first-language students. It would seem then, that while the data from All Essays suggest that performance may be related to error type and frequency, the ASL and English first-language data suggest that, in most circumstances, this is not the case and that there must be other contributing factors to explain the differences in performance.

As mentioned, there were three smaller language subgroups within the total ESL group, namely Afrikaans second-language students, European foreign-language students (EFL), and African foreign-language (AFL) students. The tabled results for the error analysis for these groups can be found in Appendix 2. While the size of these subgroups limit the extent to which any definite conclusions can be reached concerning differences across second-language groups, they do offer a useful comparative framework with which to discuss the nature of African second-language (ASL) students' difficulties with academic essay writing. It appeared that the African foreign-language (AFL) students did not differ substantially from the ASL group and displayed similar patterns of error type and frequency. In contrast, the ASL group appeared to differ markedly from the Afrikaans second-language and European foreign-language groups. In particular, the average number of overall errors was substantially lower for the Afrikaans second-language and EFL groups compared with the ASL group. Furthermore, while EFL and Afrikaans students consistently produced more misordering errors than any other type of error, misinformation errors were the most common type of error in the ASL language group. However, while misordering errors made up a greater percentage of EFL and Afrikaans essays than of ASL essays, the overall average number of misordering errors per essay was lower for EFL and Afrikaans essays than for ASL essays. There was also a substantial difference between the average number of misinformation errors produced by Afrikaans and EFL students, compared with that produced by ASL students. The data appear to suggest that Afrikaans second-language and EFL groups displayed similar patterns of error type and frequency to the English first-language group.

The combined data from all language groups appear to suggest that micro-level errors are only significant in explaining differences across language groups as a whole, where factors such as prior schooling may be impacting on the frequency and type of errors produced by students. The

exception to this pattern appears to be high performing students from the ASL and AFL language groups, where performance may be related to the low error frequency. However, this relationship does not hold across language groups, where high performing students from English first-language, Afrikaans second-language and EFL groups produced considerably fewer errors than high performing ASL and AFL students. Furthermore, while performance may be related to error frequency at the very top end of the ASL group, the differences across the other three performance groups are minimal and do not suggest any specific relationship between performance and surface-level errors. In other words, the pass/fail distinction for ASL students is not determined by micro-level language competency.

5.2. Cohesion Analysis:

The same groups of students' essays were analyzed for cohesion errors and the results are summarized and presented in Tables 5a and 5b that follow, as well as in Tables 8a and 8b³ in Appendix 2. The tables were compiled in the following way. First, each language group was divided into the four performance categories; over 70%, between 65% and 50%, between 45% and 35% and below 30%. Second, the number of essays (n) and the average number of errors per essay for each performance category (AVE.) were calculated and tabled. The overall range of errors for each performance category in each language group was also provided. Third, for each of five cohesion error types namely, Reference errors, Ellipsis errors, Substitution errors, Lexical errors, and Conjunctive errors, the total number of errors (Tot.), average number of errors per essay (Ave.) and percentage (%) of total errors, for each performance category in each language group, were calculated. The final column represents the Total number of Errors for each performance group, in each language group, across all types of errors.

³ Tables 8a and 8b (in Appendix 2) represent the cohesion analysis results for the three language subgroups; EFL, AFL, and Afrikaans Second-Language.

The results for the Cohesion Analysis for All Essays, English First-Language, and English Second-Language are presented in Table 5a below. Table 5b below represents the results for the Cohesion Analysis for African Second-Language Essays.

Table 5a: Results of a Cohesion Analysis for All Essays, English First-Language, and English Second-Language Essays

Language Group	Performance category	n	AVE	Range	Reference			Ellipsis			Substitution			Lexical			Conjunctive			Total Error
					Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	
ALL ESSAYS	Total	149	20.3	5-33	1396	9.4	46	19	0.1	0.6	236	1.6	8	262	1.8	9	1112	7.5	37	3025
	Over 70%	42	16.3	5-31	327	7.8	48	6	0.1	0.9	59	1.4	9	50	1.2	7	242	5.8	35	684
	<65% and >50%	41	20.7	8-33	403	9.8	48	5	0.1	0.6	57	1.4	7	80	2	9	302	7.4	37	847
	<45% and >35%	37	23.1	9-32	398	10.8	47	2	0.05	0.2	76	2.1	9	74	2	9	304	8.2	36	854
	below 30%	29	22.1	10-30	268	9.2	42	6	0.2	0.9	44	1.5	7	58	2	9	264	9.1	41	640
ENGLISH FIRST-LANGUAGE	Total	30	11.4	5-20	173	5.8	50	1	0.03	0.3	31	1	9	28	0.9	8	110	3.7	32	343
	over 70%	11	9.3	5-13	48	4.4	47	0	0	0	9	0.8	9	8	0.7	8	37	3.4	36	102
	<65% and >50%	12	11.9	8-17	72	6	50	1	0.08	0.7	11	0.9	8	13	1.1	9	46	3.8	32	143
	<45% and >35%	5	15	9-20	43	8.6	57	0	0	0	9	1.8	12	5	1	7	18	3.6	24	75
	below 30%	2	11.5	10-13	10	5	43	0	0	0	2	1	9	2	1	9	9	4.5	39	23
ENGLISH SECOND-LANGUAGE (ESL)	Total	119	22.5	9-33	1223	10.3	46	18	0.2	0.7	205	1.7	8	234	2	9	1002	8.4	37	2682
	Over 70%	31	18.8	10-31	279	9	48	6	0.2	1	50	1.6	9	42	1.4	7	205	6.6	35	582
	<65% and >50%	29	24.3	9-33	331	11.4	47	4	0.1	0.6	46	1.6	7	67	2.3	10	256	8.8	36	704
	<45% and >35%	32	24.3	11-32	355	11.1	46	2	0.1	0.3	67	2.1	9	69	2.2	9	286	8.9	37	779
	below 30%	27	22.9	12-30	258	9.6	42	6	0.2	1	42	1.6	7	56	2.1	9	255	9.4	41	617

Table 5b: Results of a Cohesion Analysis for African Second-Language Essays

Language Group	Performance category	n	AVE	Range	Reference			Ellipsis			Substitution			Lexical			Conjunctive			Total Errors
					Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	
AFRICAN SECOND-LANGUAGE (ASL)	Total	100	24.1	11-33	1110	11.1	46	15	0.2	0.6	171	1.7	7	212	2.1	9	899	9	37	2407
	over 70%	25	20.4	11-31	244	9.8	48	5	0.2	1	43	1.7	8	37	1.5	7	182	7.3	36	511
	<65% and >50%	25	26	21-33	313	12.5	48	3	0.1	0.5	37	1.5	6	64	2.6	10	231	9.4	36	651
	<45% and >35%	25	26.3	21-32	304	12.2	46	1	0.04	0.2	53	2.1	8	57	2.3	9	243	9.7	37	658
	below 30%	25	23.5	12-30	249	9.9	42	6	0.2	1	38	1.5	6	54	2.2	9	240	9.6	41	587

The range for All Essays collectively was between 5 and 33 errors per essay, with an overall average number of 20.3 errors per essay. Reference errors were the most frequent type of error across students' essays, constituting 46% of 3025 total errors, followed by conjunctive errors (37% of total errors). This pattern was consistent across all performance groups and there appeared to be an inverse relationship between student performance and error frequency, with the number of errors increasing as performance decreased. Substitution cohesion errors and lexical cohesion errors constituted a similar, small portion of total errors (8% and 9% respectively), with averages of 1.6 and 1.8 errors per essay. There was a marked difference in the overall average number of errors produced by different performance groups, with the first performance group producing fewer errors than the other three groups (an average of 16.3 errors per essay compared with 20.7, 23.1, and 22.1 errors per essay). Interestingly, the lowest performance group did not always produce the greatest average number of errors and, in some cases, even produced less errors than the second performance group. The data appear to suggest, then, that performance may be related to error frequency in high performing students' essays, while the difference in error frequency between the other three performance categories is minimal. An analysis of the separate language groups appears to suggest that cohesion may be more strongly related to the differences across language rather than performance.

Within the English First-Language Group:

The average number of overall errors for the English first-language group was 11.4 errors per essay, ranging from 5 errors per essay to 20 errors per essay. The group appeared to produce more reference errors (50% of total errors) than any other type of error, with an average of 5.8 errors per essay. This pattern was consistent across performance category. Conjunctive errors followed reference errors as the next most frequent type of cohesion error, constituting 32% of

the English first-language group's total errors, with an overall average of 3.7 errors per essay. The lowest performance group yielded the highest frequency of conjunctive errors, with an average of 4.5 errors per essay. With the exception of the second performance group, English first-language students appeared to produce a similar small number of substitution errors and lexical errors (9% and 8% of total errors, respectively). It was interesting to note that, with the exception of conjunctive errors, the fourth performance group did not produce the highest frequency of errors for each type of cohesion error. This seems to suggest that student performance is not directly related to the type or frequency of cohesion errors within the English first-language essays and that other factors must be contributing to the performance of students.

Within the English Second-Language Group:

A similar pattern was evident within the ESL group, where the average number of overall errors within this language group was 22.5 errors per essay, with an overall range of 9 to 33 errors per essay. This group appeared to make more reference errors (46% of total errors) than any other type of error, with an overall average of 10.3 reference errors per essay. This pattern was consistent across all performance groups. Conjunctive errors followed as the next most frequent type of error, constituting 37% of total errors with an overall average of 8.4 errors per essay. ESL students produced a similar number of substitution and lexical errors (9% and 8%, respectively), with an average of 2 and 1.7 errors per essay, respectively. The first performance group yielded a considerably lower overall average number of errors (18.8 errors per essay) compared with the other three performance groups. The differences between the overall averages for the second, third and fourth performance groups, however, were minimal (averages of 24.3, 24.3, and 22.9, respectively), suggesting that, with the exception of high performing students, performance is not related to the frequency of cohesion errors produced. There did not

appear to be any distinct pattern across the performance groups with regard to frequency of particular types of errors, although it appeared that high performing students generally produced the least number of errors for each type of error.

Within the ASL group (refer to Table 5b), students produced an overall average of 24.1 errors per essay, ranging from 11 errors per essay to 33. The group produced more reference errors than any other type of error, making up 46% of total African second-language errors (an average of 11.1 errors per essay). This can be compared with 37% of total errors being attributed to conjunctive errors, with an average 9 errors per essay. This pattern was consistent across all performance groups. While there appeared to be an inverse relationship between performance and error frequency, the lowest performance group did not always produce the greatest average number of errors and, at times, even yielded fewer errors than the second performance group. The ASL language group yielded similar totals of lexical and substitution error (9% and 7% of total errors), with an average of 2.1 errors per essay and 1.7 errors per essay, respectively. In general, there was little difference between the second, third and fourth ASL performance categories with respect to error type or frequency, suggesting that cohesion was not a critical factor in determining mark allocation.

A Comparative Analysis:

At first glance, there appear to be similar patterns evident across the ASL and English first-language groups, however, while the two groups may have yielded similar proportions of error, the overall average number of errors per essay, for each group, was very different. ASL students produced more than double the average number of errors per essay compared with English first-language students (average of 24.1 errors per essay compared with 11.4 errors per essay).

Moreover, while the English first-language and ASL groups' reference errors constituted a similar percentage of total errors (50% and 46%, respectively), the overall average number of reference errors per English first-language essay was considerably fewer compared with ASL essays (5.8 errors per essay compared with 11.1 errors per essay). This pattern is also evident when comparing specific performance categories across language groups, where the lowest average of 9.8 reference errors per essay (ASL first performance group) was still greater than the highest average of 8.6 reference errors per essay produced by third English first-language performance group. This was consistent, yet more pervasive, across conjunctive errors where the average number of errors produced by ASL students totalled 9 errors per essay, while English first-language students produced on average 3.7 conjunctive errors per essay. Furthermore, while the highest average of conjunctive errors within the ASL group was 9.7 errors per essay (produced by the third performance group), the lowest average for this group (7.3 errors per essay by the first performance group) was still greater than the highest average displayed by English first-language students (4.5 errors per essay produced by the fourth performance group). It would appear from the data that while the type and/or frequency of cohesion errors may not be directly related to performance, a comparison of ASL and English first-language essays does seem to suggest that cohesion errors are primarily linked to differences across language groups, where ASL students produce on average, almost double the number of cohesion errors yielded by English first-language students.

A comparative analysis of Afrikaans second-language, EFL and AFL students (refer to Tables 8a and 8b in Appendix 2) indicates that the degree to which different second-language students produce these errors may differ considerably. On the whole, EFL and Afrikaans second-language students produced a substantially lower average number of errors compared with the

ASL group. The ASL group also yielded a greater average number of lexical and conjunctive cohesion errors, compared with the Afrikaans second-language and EFL groups. A similar pattern was found when comparing the average number of reference errors produced by each language group. While Afrikaans second-language students appeared to differ quite markedly from ASL students, they resembled first-language students in the type and frequency of cohesion errors produced (refer to Table 5a). European foreign-language (EFL) students also seemed to perform similarly to English first-language students, although the group, in fact, produced less overall errors compared to the first-language group. In contrast, the African foreign-language group appears to resemble the broader ASL group, although the overall average number of errors for the AFL group was slightly smaller than the ASL overall average.

From an examination of the individual language groups, there does not appear to be any significant relationship between the performance of students and the type or frequency of cohesion errors produced, although it was noted that, in many cases, the first performance group tended to produce fewer cohesion errors compared to the other three performance groups. A comparative analysis seems to suggest that the type and frequency of cohesion errors may be related to differences across language groups, where ASL students tended to produce greater frequencies of error compared with English first-language students.

5.3 Extracts of Cohesion Analysis:

In order to be more specific about the way in which cohesion errors are related to the differences across language groups, extracts from students' essay writing will be included to illustrate the different types of cohesion errors that were produced. As mentioned, the most

frequent type of cohesion error produced by All Essays was the reference error, which constituted 46% of overall total errors. Reference cohesion errors can be divided into three different types; namely pronominal, demonstrative, and comparative errors. Pronominal errors occur when obligatory personal or possessive pronouns are omitted or used incorrectly to form links with nouns in previous F-units; for example in essay five of the ASL group the student states that **“individuals are selected because of their adaptation to the environment and other individuals die or become extinct while others survive and they reproduce more offsprings”**. Once the reader has reached the second “others”, it is not clear to whom the writer is referring when he/she claims “they reproduce...”. The same student goes on to say **“Variation is the differences in their certain trait or character”**, without providing a pronominal reference for the possessive pronoun “their”. ASL essay 44 provides an interesting example of pronominal error, where the student’s introductory line is **“It when nature select a certain individual or group of organism...”**. In this instance the word “it” refers back to “the process of natural selection” in the essay question, however, the student does not make this clear and the reader must refer back to the question to decipher what the writer means by “It”. ASL students were not the only group to produce these kinds of reference errors as seen in essay two of the EFL group. The student writes **“According to the theory of genetics, their characteristics would be inherited to their offspring...”**, without providing any reference as to who or what the possessive pronoun “their” refers to. The second type of reference error, demonstrative reference error, occurs when an incorrect demonstrative pronoun is used to refer to or point out a particular person, place or object. For example, essay one of the English first-language group reads **“Characteristics that can better suit them to the environment can be inherited”** without demonstrating who “them” refers to. In essay 65 of the ASL group, the student writes **“Natural selection does not bring perfectness but when the environment**

changed it didn't favour them". In this sentence the demonstrative pronoun "them" has been used without a previous reference. Similarly, essay four of the African foreign-language (AFL) group reads "**In that time...**" without providing the reader with a previous reference to suggest when "that time" is/was.

The third type of reference error is the comparative reference error. This occurs when an item expresses or implies a comparative relationship without providing a presupposing appropriate reference of comparison. These types of reference errors were common among all students; for example essay two of the EFL group reads "**After the industrialization, things were the opposite...**". It is not clear from the preceding discourse how "things" were different or what they were the "opposite" of, because the student does not clearly indicate a comparative reference. The most common comparative reference was the use of the word "lighter" and/or "darker" to describe the two types of peppered moth. In some instances (e.g. essay one of the Afrikaans Second-Language group), this form of cohesion was used correctly, "**There were two versions of this moth, a light version and a dark version. The darker moth...**" where the student clearly indicated that one moth was darker than the other. However, in a number of cases students wrote "**For example, there were a lighter moth before industrialization and darker one after...**" (EFL essay two) or "**the darker moths are more likely to die young and to therefore produce less, if any, offspring...**" (English first-language essay 25) without providing preceding references with which a reader could compare the item. One ASL student (essay 9) produced a high frequency of these errors and claimed for example, that "**the darker allele became more common as predators would be less likely to see the darker variation... the frequency of the allele occurring would be greater**". The student had not provided any comparative references and, in fact, only went on to describe the light version of

the moth later in the essay. The reader, therefore, has no preceding reference with which to compare this statement and would be left asking questions such as “darker/greater than what?” or “more common than what?”.

Conjunctive errors followed reference errors as the next most frequent cohesion error overall, constituting 37% of All Essays. Conjunctives are used to signify how items are connected to one another across discourse and four main classes of conjunctives were used in the present study’s cohesion analysis; namely additive conjunctives (e.g. and, for example), adversative conjunctives (e.g. but, although, on the contrary), causal conjunctives (e.g. so, therefore, as a result), and temporal conjunctives (e.g. then, after that, before). An example of an additive error is seen in essay 21 of the ASL group, “**For an example, the trees were lighter in colour...**”, where the additive phrase “for example” linking the previous unit to the subsequent one is incorrectly formed. ASL essay 67 also provides an example of additive conjunctive error in the following extract, “**The white moth camouflaged itself... and so it was safe... and the black’s chances of survival were slim because... and so the black moth... and so it was difficult for the birds...**”. The student has produced a run-on sentence, where it becomes difficult to deduce the links and relations between units. AFL essay six also provides a good example of an additive conjunctive error where the student writes “**It will live longer in other word it will produce offspring and the offspring will inherit ... and the white moth will decrease... and pass those characteristics across the generation**”. An example of the second class of conjunctive error, adversative error, can be seen in EFL essay two which reads “**the light-coloured moth was not easily eaten by the bird... On the contrary, the dark-coloured moth would be eaten...**”. The student has used the adversative link in the incorrect/inappropriate context, where “By contrast” or “On the other hand” would have been a

more suitable phrase. A further example of adversative reference error can be seen in ASL essay 89 where the student writes **“the black moth was likely to be eaten... so the white moths were also very likely to survive but when the time goes on the trees become dull”**, without making it clear what the causal links are between the white moths surviving and the trees becoming dull. The third type of conjunctive errors are causal errors. Examples include essay one of English first-language which reads **“Some species have characteristics that better suit them to the local conditions so that they can get resources”** and ASL essay 15 which reads **“The white moth was usually hidden by trees. As a result the black moth were eaten”**. In the first example, the student has used the incorrect causal expression (so that) and, in doing so, has implied that the reason certain species have characteristics that are well suited to a particular environment is so that they will be able to obtain resources. In truth, it is purely by chance that certain individuals have advantageous characteristics that will allow them to have access to food, etc. The sentence would have been more correctly expressed if the student had used the causal expression “because” or “due to” and claimed that “Because certain species have characteristics that are better suited to local conditions, they will have access to scarce resources...”. The second example has incorrectly implied a causal relationship between the white moths being hidden and the black moths being eaten when, in fact, it was the colour of the black moths themselves that ‘caused’ them to be eaten by birds. EFL essay one demonstrates a temporal conjunctive error in the following quotation, **“The trees were light in colour at first and the white peppered moths were unable to be eaten by predators”**, where the student does not provide the reader with an understanding of when “at first” refers to. ASL essay three also provides a good example of temporal cohesion error, **“The black moths couldn’t survive predation because they couldn’t camouflage in the trees, therefore, were rarely found before”**. The student does not continue the sentence to tell the reader that it was “before” the

Industrial Revolution that black moths were rarely found such that the reader is left guessing when “before” refers to.

Ellipsis errors were extremely rare among all language groups, making up only 0.6% of total student errors. This type of error occurs when the phrase/clause that has been omitted is not recoverable or cannot be interpreted from the previous unit/sentence. An example of ellipsis errors can be found in ASL essay 81 where the student writes **“Inheritance, it’s ask the question of whether adaptation is inherited but when they have solved that problem they see that it is not”**, as well as in English first-language essay 23, **“All species vary in characteristics. Some will have advantageous and some not, they will have disadvantageous”**, where the student has incorrectly elided “characteristics” in the second sentence.

Lexical cohesion errors constituted only 9% of total student errors, averaging 1.8 errors per essay. Lexical cohesion concerns the way in which the selection of vocabulary affects the cohesive ties within discourse and this was divided into three forms; namely synonymy, hyponymy, and collocation. Synonymy refers to words that denote the same or similar meaning, for example, kill and slay or ship and vessel. Errors occur when words are used in an inappropriate context, such that the item does not cohere with or relate to other words in the discourse. For example, essay 56 of the ASL group reads **“Before the Industrial Revolution very few dark moths were available because...”**, where the word “available” has been incorrectly used to suggest that dark moths were not plentiful or abundant in number. EFL essay 5 uses the word **“radiant”** to describe the white peppered moths and to emphasize the idea that **“the white populations decreased as they were conspicuous”**. While the word “radiant” is

not incorrect, it is not common practice to speak/write about moths as being radiant and, as such, the two words do not cohere naturally. A further example of incorrect synonymy is taken from ASL essay 45 which reads “**trees were corrupted by soot from the factories...**”, where the student is referring to the idea that the trees changed colour and became unclean/dirty (became darker) because of pollution from the industries. Hyponymy refers to the way in which items form cohesive ties within and across super-ordinate and sub-ordinate categories; for example, the word “car” or “truck” can form a cohesive tie with “vehicle” or, in the case of the present study’s example, the super-ordinate category of “insect/s” can form a tie with the sub-ordinate item “moth”. These types of lexical errors were very rare in the essays analysed, although essay 87 of the ASL group used the super-ordinate category of “**mammals**” to include “**dark and lighter peppered moths**”, while AFL essay 7 reads “**There were individuals of the same population but in different species**”. In this sentence it appears that the students may have confused the super-ordinate category of “species” with the sub-ordinate category of “population”, where species can break up into different populations but not the reverse.

The third type of lexical error, collocation errors, occur when items are incorrectly placed together or related. An example of incorrect collocation can be seen in the English first-language essay 21 which reads, “**Natural selection argues that a characteristic...**”. It is incorrect to collocate a theory with the ability to argue for something. Rather, the sentence should read, “Darwin, who proposed the theory of Natural Selection, argued that...”. ASL student one claimed that “**certain advantageous characteristic(s) of individual(s) will cause it to survive...**”, where it is incorrect to collocate a “characteristic” with the ability to “cause” something “to survive”. Similarly, essay four of the Afrikaans second-language group reads “**This camouflage character make the moth survive...**”.

The final type of cohesion error is substitution error. Substitution occurs when one item replaces another item in discourse with the same meaning but different reference. Substitution errors can be either nominal or verbal. Nominal substitution occurs when a phrase or noun is substituted, while verbal substitution occurs when a clause (containing a verb/predicate) is substituted. An example of a nominal substitution error is seen in AFL essay 8 which reads “**The white colour protected the moth from birds... the black ones did not help because...**”, where “ones” has been used to substitute “colour”, although this is not made clear from the sentence. Essay one from the Afrikaans second-language group claims that “**This process can be identified in the peppered moth...**”, where “this process” refers to the process of natural selection. However, the student has named this process three sentences earlier and, as such, it is difficult to determine which process he/she is referring to. An example of a verbal substitution error is produced in EFL essay one, which reads “**so that is how natural selection occurs...**”, where the context does not suggest what “that” refers to and the student is not specific. Similarly, in ASL essay four made claims such as “**The same occurred in the black moth population...**” and “**So here we can see...**” without specific reference explaining what “same “ and “here” are substituting.

5.4 Coherence Scale Analysis:

The results of a coherence scale analysis for each language group are summarized and presented in Tables 6a and 6b that follow, as well as Tables 9a and 9b⁴ in Appendix 2. The tables were compiled in the following way. First, each language group was divided into the four performance categories; over 70%, between 65% and 50%, between 45% and 35% and below

⁴ Tables 9a and 9b (in Appendix 2) represent the coherence scale analysis results for the three language subgroups; EFL, AFL, and Afrikaans Second-Language.

30%. Second, the number of essays (n) in each performance category for each language group was provided, as well as the range of scores for each performance category. An average coherence score (AVE) for each performance category was also included. The table was then divided into nine sections according to the scores of the coherence scale, i.e. 5, 4.5, 4, 3.5, 3, 2.5, 2, 1.5 and 1. The number of essays that scored in each of these categories was recorded. The results for the coherence scale analysis for All Essays, English First-Language, and English Second-Language are presented in Table 6a below. Table 6b represents the results for the coherence scale analysis for African Second-Language Essays.

Table 6a: Results for the Coherence Scale Analysis for All Essays, English First-Language, and English Second-Language Essays

Language Group	Performance category	n	range	AVE	5	4.5	4	3.5	3	2.5	2	1.5	1
ALL ESSAYS	Total	149	1-5	2.9	3	8	14	31	35	24	19	8	7
	Over 70%	42	2-5	3.7	3	7	9	12	8	2	1	0	0
	<65% and >50%	41	2-4.5	3.0	0	1	4	9	15	8	4	0	0
	<45% and >35%	37	1.5-4	2.0	0	0	1	10	8	7	7	4	0
	below 30%	29	1-3	1.9	0	0	0	0	4	7	7	4	7
ENGLISH FIRST-LANGUAGE	Total	30	2-5	3.4	1	2	7	7	6	4	3	0	0
	over 70%	11	3-5	3.9	1	2	4	2	2	0	0	0	0
	<65% and >50%	12	2-4	3.1	0	0	2	4	2	2	2	0	0
	<45% and >35%	5	2.5-4	3.1	0	0	1	1	1	2	0	0	0
	below 30%	2	2-3	2.5	0	0	0	0	1	0	1	0	0
ENGLISH SECOND-LANGUAGE (ESL)	Total	119	1-5	2.4	2	6	7	24	29	20	16	8	7
	Over 70%	31	2-5	3.6	2	5	5	10	6	2	1	0	0
	<65% and >50%	29	2-4.5	3	0	1	2	5	13	6	2	0	0
	<45% and >35%	32	1.5-3.5	2.7	0	0	0	9	7	5	7	4	0
	below 30%	27	1-3	1.9	0	0	0	0	3	7	6	4	7

Table 6b: Results for the Coherence Scale Analysis for African Second-Language Essays

Language Group	Performance category	n	range	AVE	5	4.5	4	3.5	3	2.5	2	1.5	1
AFRICAN SECOND-LANGUAGE (ASL)	Total	100	1-5	2.8	1	4	6	21	24	19	14	6	5
	over 70%	25	2-5	3.5	1	3	4	9	5	2	1	0	0
	<65% and >50%	25	2-4.5	3	0	1	2	4	10	6	2	0	0
	<45% and >35%	25	1.5-3.5	2.8	0	0	0	8	6	4	5	2	0
	below 30%	25	1-3	1.9	0	0	0	0	3	7	6	4	5

The overall average coherence score (AVE) for All Essays was 2.9, suggesting that students, in general, achieved adequate development of themes and topics within their essays. The score further suggests that the relevant conceptual principles and information were covered by most students although, in general, there was little integration of these concepts or resolution of the main essay topic. The first performance group achieved the highest average coherence score (3.7), followed by the second performance group (3). The third and fourth performance categories performed well below the average coherence score, achieving on average 2 and 1.9 out of a possible 5. This demonstrates that students who passed the essay (i.e. received over 50% for the essay) displayed adequate structure and coherence, while students who failed (scored below 50%) their essays displayed fairly weak to poor coherence. Generally, students falling within the latter group tended to rely heavily on explicating the example without developing the necessary conceptual issues. The data from All Essays seem to suggest that the coherence of students' essays is strongly related to performance or mark allocation, where there is a distinct difference between the coherence scores of essays that passed compared with essays that failed. The results of the separate language groups appear to support this conclusion.

Within the English First-Language Group:

English first-language students scored an average of 3.4 out of 5 for coherence in their essays, ranging from 2 to 5, out of a possible 5. There was an interesting difference between the coherence scores of students within the first, second and third performance groups compared to the lowest performance group (below 30%), where the first three groups all showed average to above average coherence (3.9, 3.1, and 3.1 out of 5, respectively) compared with the fourth performance group's weak to average coherence (2.5). The data from this language group appear to support the conclusion that coherence is related to student performance, particularly

in students performing below 30%, where there was no topic initiation/introduction, difficulty structuring essays, and little development of the main themes. It therefore appears that, given that the surface level errors and cohesion errors did not distinguish between pass and fail essays, the development of coherence is the key determinant of successful engagement for this group.

Within the English Second-Language Group:

The overall average coherence score (AVE) for ESL students was 2.4 out of 5, with a range of 1-5 on the coherence scale. It would appear that students in the first and second performance groups (i.e. those students that received a pass mark for their essays) displayed average to above average coherence in their essays. ESL students from the first performance group produced an average score of 3.6 out of 5 for coherence, while students from the second group scored an average of 3 out of 5. This suggests that these students were able to provide a logical structure to their essays, show adequate development of the main conceptual principles and make some attempt at resolving the essay topic. ESL students with a failing mark, however, displayed weak to poor coherence (2.7 and 1.9 out of a possible 5), where topics/themes were not explored or developed and where there was an over reliance on the example.

The ASL group (refer to Table 6b) reflected a similar pattern to the broader ESL group, with an overall coherence score average of 2.8 out of a possible 5. This coherence score suggests that African second-language students, in general, produced slightly below average coherence in their essays. The first and second performance groups scored averages of 3.5 and 3 on the coherence scale, while the third and fourth groups scored 2.8 and 1.9 out of a possible 5, respectively. It would appear, then, that students who passed the essay (i.e. above 50%) displayed, in general, average to above average coherence, with adequate development of the

conceptual principles and a logical structure to the essay. In contrast, students that failed the essay displayed weak to poor coherence, with undeveloped topics and an over reliance on the example in explaining conceptual issues. The data appear to suggest that coherence is strongly related to the performance of students, with the first performance category scoring well above that of the lowest performance group.

A Comparative Analysis:

While the overall average coherence score (2.9) for All Essays appeared to suggest that students, in general, displayed adequate coherence in their essays, there were interesting differences between the coherence scores of ASL students and English first-language students. The ASL group scored 2.8 out of 5 overall on the coherence scale compared with 3.4 scored by the first-language group. The score range of the ASL group was also lower (1-5) than that of the first-language group (2-5), with no first-language students scoring in the very poor to poor score categories (i.e. 1-1.5 out of 5). The first ASL performance group scored a similar average to the overall average coherence score of the first-language group (3.5 compared with 3.4 out of 5 respectively), while the lowest coherence score from the first-language group (2.5 out of 5) was still greater than the overall average score of the ESL group (2.4 out of 5). The data would appear to suggest that ASL students, in general, produce weak to average coherence in their essays, with only brief development of the topics and themes and little integration of the main concepts. Within the ASL group, only those students that passed the essay (i.e. 50% and above for performance category) achieved average to above average coherence. In contrast, English first-language students generally demonstrate average to good coherence in their essays, with adequate development of the main themes. The lowest first-language performance group was the only group which showed below average coherence. Within the ASL group, the first and

second performance categories (i.e. those essays that achieved over 50%) all scored 3 and over out of a possible 5 on the coherence scale, while those essays that failed (third and fourth performance groups) all scored below 3 on the scale. The data from a coherence analysis on ASL and English first-language essays seem to suggest that coherence is strongly related to the performance of students, where high performing students displayed good coherence and a logical structure to their essays compared with the poor structure of failed essays.

An examination of the three subgroups of Afrikaans second-language, EFL and AFL students (refer to Tables 9a and 9b in Appendix 2) revealed similarly interesting findings. While the Afrikaans essay population was small, these essays displayed logical thought and structure, with good to very good development of the main themes and topics. The EFL group yielded an overall average coherence score of 3.6 out of a possible 5, displaying good to very good coherence. In contrast, the AFL group scored an average of 2.1 out of 5 on the coherence scale, with no AFL students scoring above 3.5 out of 5. This suggests that AFL students, in general, had difficulty monitoring the development of their essays as well as problems with introducing and resolving the main topics/themes. In this regard, the Afrikaans second-language and the EFL groups reflected a similar average coherence score to the English first-language students, while the ASL and AFL groups displayed a considerably lower overall coherence score.

The data from a coherence analysis on all language groups appear to suggest that the coherence of students' essays may be directly related to their performance, with high performing students displaying the ability to track and monitor the development of their essays while failing students show poor structure, little development of the central themes and an over reliance on a concrete example. The degree to which coherence is achieved also seems to be related to the differences

across language groups, where ASL and AFL groups displayed much weaker coherence and a poorer structure to their essays compared with English first-language, Afrikaans second-language and EFL groups.

5.5. Extracts of Coherence Analysis:

The tables and graphs presented thus far, provide a good summary of the differences and similarities in coherence between the four performance groups as well as across the particular language groups. However, an in-depth qualitative analysis of the coherence in students' essay writing requires a closer examination of the language students produce and, as such, extracts have been taken from students' essays to illustrate the scores that have been assigned to excellent, average and weak coherence.

As is evident from the model answer (refer to appendix 3), there were four sub-topics or themes, over and above the central topic of natural selection, that the students were required to address when answering the essay question. These were the concepts of variation, competition and heritability as well as the peppered moth example. The essay question suggests that the latter topic was necessary to illustrate the three principles of natural selection and, as such, part of the discussion surrounding variation, competition and heritability should have included reference to this example. Bradbury et al.'s (1989) framework of topic initiation, development and resolution, outlined in Chapter Four, was used to assess the way in which students from different performance groups and different language groups dealt with each of the conceptual principles and their connections to the broader process of natural selection.

The ASL and AFL groups displayed below average coherence (2.4 and 2.1 out of 5, respectively), where students appeared to have difficulty developing and tracking their discussion and relied, instead, on explicating the example. The lowest performance groups in these two language groups in particular, displayed very weak to poor coherence and consistent difficulties with developing the main topics and themes. Introductions and conclusions (resolution) were rarely identified in these essays and for the most part, these students explained the peppered moth example. In some cases, students did not use the correct example and described either the finch, giraffe or, in the case of one student (ASL essay 91), the butterfly. The same student (essay 91) concluded **“The process of peppered moth are vice versa. The one increases the other one decreases”**. Within each of the separate language groups, the first performance category (essays obtaining above 70%) achieved the highest coherence score, with students displaying good coherence and co-ordination of themes in their writing and consistent topic initiation, development and closure for each of the respective sub-topics. An example of good theme development is evident in ASL essay one’s explanation of competition, **“there needs to be... a struggle for survival, e.g. indirect competition not to be eaten by birds, in the case of the peppered moth... In this struggle, or competition, a certain characteristic... will cause it to survive... dark moths increased as they camouflaged better and were less likely to be eaten... white populations decreased as they were conspicuous”**. In this essay, the student is repeatedly referring back to the topic of competition while at the same time making reference to the peppered moth example. The student provides a definition of competition and makes it clear what the moths are competing for, i.e. “not to be eaten by birds”. In almost all high performing essays, the students provided an overarching introduction to the process of natural selection, for example the introductory line of ASL essay one reads **“Natural selection is the process in a population whereby a certain heritable**

characteristic is perpetuated over generations, and becomes common in the population..." while ASL essay 11 begins **"Natural selection is the process of the selection of favourable characteristics within a species over time..."**. Similarly, these students concluded their essays by integrating the principles discussed in the essay with the broader concept of natural selection; for example, essay five of the ASL group concludes **"Thus note that natural variation, competition and heritability of traits are inseparable necessities for Natural Selection to occur"**, while student 10 ties the peppered moth example to the broader topic by writing **"These all show features of natural selection, i.e. change in the average genome of a population over generations"**.

Within the English first-language group, there were 11 essays in the first performance category with an overall coherence score of 3.9. These essays displayed very good coherence and a well-thought out structure; for example, essay two begins **"The process of natural selection selects advantageous individual characteristics, which are inherited, in the context of competition..."** and then develops this introduction into a discussion around the three core principles of variation, competition and inheritance, **"In any population there is a variety of individual characteristics which occur naturally... certain characteristics will better suit local conditions in the context of competition... live longer, produce more offspring and pass on... across generations... there will be an adaptive change in the population... organisms with disadvantaged characteristics will not live as long..."**. The student explains and develops each of the central topics first before attempting to link them to the example, where s/he says **"Before the industrial revolution in Britain the dark peppered moth was rare whereas the pale moth flourished... the allele of the pale moth was naturally selected... the industrial revolution covered the pale tree trunks with soot... allele of dark**

moth was selected... there was an adaptive in the whole population...". The student provides resolution to each of the sub-topics by linking them to the peppered moth example as well as closure on the question as a whole, **"There was a shift in the genepool and the average distribution of the characteristics... this is natural selection"**.

Second performance group essays (between 50% and 65%) did not exhibit the same degree of competency in topic development as first performance group essays, although all relevant concepts and information were included in the essay. In some instances, there was an attempt at topic initiation and resolution, although this was a fairly rare occurrence in this performance category across all language groups. ASL essay 30 is an example of a good attempt at introducing the main topic, **"Natural selection is the process whereby individuals of a specie (sic) who are better equipped to survive will survive because they can compete successfully for resources... the favourable genes... would be passed on"**, while essay 35 demonstrates a typical introduction of this performance group, **"This process can be associated with the following concepts, competition, inheritance, variation..."**. In the latter example, the student is aware that s/he must cover three core principles, however no larger definition is provided for the process of natural selection and most second performance group students did not link or integrate these principles back to the broader topic of natural selection at the end of the essay. In most cases, the essay ended with the description of the peppered moth example as is illustrated in the following extracts, **"The black moth survive and the white moth died then natural selection occured"** (ASL essay 38) and, **"because it's colour stood against the black sooted trees and the black moth was naturally selected"** (ASL essay 42). Interestingly, the essays in this performance group often scored full marks for the illustration of the example but very little marks for the description of the theoretical or conceptual principles.

In contrast, high performing essays scored high marks for the description of the process of natural selection. This may have been a result of the way in which the students set out their answers, where first performance group students tended to describe the theoretical principles before explaining the moth example, as opposed to second performance group students who tended to mention the principles within a discussion of the example.

There was a marked difference between the coherence scores of the first and second performance groups compared with the third and fourth groups. It would appear that students who failed the essay question had difficulty tracking/monitoring the development of their essays. These essays generally failed to produce any introduction or conclusion to the question and relied, instead, on explicating the example. Essay 65 and 98 of the ASL group illustrate typical introductions of failed essays, **“There are two types of peppered moth the dark and light...”** and **“There was a peppered moth that was dark and that was light before industrial revolution...”**. ASL Student 98 goes on to write about how changing conditions brought about natural selection in the moth colour but the essay is not clear and coherent and in places becomes illogical, **“the peppered moth that was light was naturally selected because the tree was dark... there was great change after sometime whereby the change occurred when the light moth could not camouflage, so the tree was then no longer dark it was light...”**. There was an interesting trend among the ASL essays, particularly those that failed, where students began their essays using the pronoun “it” to refer back to the “process of natural selection” in the essay question. For example, essay 78 begins **“It is ‘the survival of the fittest’**”, while essay 75 introduces the answer **“It where the species have the advantages or disadvantages in competing...”**. This trend was not evident within other language groups.

The overall coherence score for Afrikaans second-language students suggests that these students, in general, produced logical, well-thought out essays with good development of the topics and themes, as well as integration of the key concepts. Essay one of the Afrikaans group scored 5 out of a possible 5 on the coherence scale and is illustrative of excellent coherence and theme development. The student begins the essay with a broad definition of the process of natural selection which points the reader to the three core principles to be discussed. Each one of these conceptual principles is elaborated on in detail and there are clear connections between them, **“certain variations in characteristics will happen to advantage... in the context of competition... Those that survive will produce offspring and pass on, through inheritance, the advantageous characteristic...”**. The student illustrates each of the theoretical principles as well as the broader process of natural selection using the peppered moth example and provides resolution to the essay as a whole by returning to the broader theme, **“In this way the melanistic allele was naturally selected... resulting in a return to the relative frequency of the white allele in the population as a whole”**. In contrast, Afrikaans essay 4 is an example of below average coherence (2.5 out of 5), where the student does not provide a clear or concise introduction, **“Natural selection is when some individuals survive because of certain characteristics or traits...”**, and does not develop the main topics in any detail. There is no resolution of the central themes and the essay concludes with **“the camouflaged moth survives because it is adapted to tree and it survives because birds cant see it”**.

The English first-language and EFL groups displayed average to good coherence across performance groups, with the exception of the lowest English first-language performance group, which scored below average (2.5) on the scale. EFL essay one displayed very good development of the main topics and introduced the essay well, **“Natural selection, or survival**

of the fittest refers to the competition for life between animals of the same species, that have varying characteristics. Animals that are more suited...". The essay lacked an integrated conclusion at the end, although some attempt was made to link the example back to the broader topic of natural selection, **"there has been a resurgence of light coloured moths because they were naturally selected because they are now better camouflaged... therefore more survive"**. Each of the EFL performance groups displayed above average coherence, although it must be emphasized that there were no low performing (below 30%) essays available in this language group. This was the only language group where failed essays still achieved average coherence, for example, essay nine scored 40% and a coherence score of 3 out of 5. While the student might not have included all the specific information that was required, there was evidence of both an introduction, **"Natural selection is a process in which fittest individuals of a specific species are selected by Mother Nature to survive and reproduce..."** and a conclusion **"When a particular population/ species (the peppered moth) are naturally selected it means that only the Fittest survive. Fittest means more offspring were left behind after they died"**.

The first performance essays in the English first-language group displayed very good theme development and tracking as well as adequate topic initiation and resolution. Essay one, two and three each provide a clear and concise introductory paragraph that guides the reader in what is to follow, for example, **"The process of natural selection selects advantageous individual characteristics, which are inherited, in the context of competition... As shall be demonstrated, these principles can be applied to the example of the peppered moth..."** (essay two). The majority of the English first-language group described and explained the theoretical concepts before explaining the peppered moth example and linking it to these

principles. The exception to this trend were the very low performing students who, like the low performing students from other language groups, generally relied on explicating the example and avoided describing or explaining the principles of natural selection. For example, essay 30 begins **“In Britain the black peppered had a mall population...”**, while essay 29 reads **“In Britain the peppered moth was used as an experiment...”**.

There are two further features of ASL academic writing, identified within a macro-level analysis, which require comment, both of which pertain to the structure of the essays. First, it was noted that a proportion of ASL students structured their essays in point form, as opposed to the standard format of sequenced, linked sentences and paragraphs. This trend was not identified among English first-language, EFL, AFL or Afrikaans second-language students, and appeared to prominent among low performing ASL students (i.e. essays below 30%). The second feature identified within ASL essays was the use of hyphenation. While hyphenation was not included within the micro-level error analysis, a large proportion of ASL students made use of this convention arbitrarily, separating words at inappropriate points. For example, ASL essay 61 uses a hyphen to separate the word “avail-able” and “geome-trically”. This trend was identified across all ASL performance groups, although it was more prevalent within the lowest category. In contrast, no Afrikaans, EFL or AFL students made use of this convention and only one English first-language student (essay 23) used a hyphen to separate the word “natural selec-tion”. It would appear from the data then that, while surface level errors and cohesion errors did not distinguish the performance of essays, the coherence of students’ essays was directly related to whether students passed or failed.

Chapter 6: Discussion and Theoretical Integration

While this study has examined a broad range of essays, taken from a number of different language groups, the specific focus of the study is the engagement of African second-language (ASL) students with academic writing. Consequently, the results of the analyses conducted on English first-language, Afrikaans second-language, EFL, and AFL essays have been used as comparative reference points from which to reflect on the kinds of difficulties that ASL students present with in academic writing. The socio-cognitive approach to underpreparedness, within which Vygotsky's theory of learning and development is central, suggests that these students may lack the necessary cognitive structures and skills required at tertiary level education because of their historically disadvantaged social, economic and political backgrounds. The Psychology I course aimed at providing mediation through text-based and learner-driven open learning materials, where each student could work at his/her own pace. This approach facilitates both high performing students who wish to work through the material at a quicker rate, as well as those students who require step-by-step guidance in order to understand the conceptual issues. While this study makes use of data from the first set of examinations and is, therefore, concerned with the effects of short-term mediation, future research could compare the effect that long term mediation has on initially low performing students.

As has been established, the role of language is central in the development of cognitive structures and the construction of knowledge, and the present study has drawn on insights into this relationship from the disciplines of psychology (cognition) and linguistics (language) to explore the processes underlying the production of students' language

(writing). It must be recognized, however, that the language that students produce is by no means a direct translation of latent processes and can only hint at the kinds of cognitive skills or structures that require mediation. Furthermore, the essays that have been analysed represent the students' performance at a particular point in time and can only be viewed within the context in which they were produced. This is pertinent in light of Hubbard's (1989) finding that essays produced under examination conditions generally display more errors than term essays or assignments. The finding suggests that unavailable source texts and time constraints exacerbate students' difficulties with academic writing, such that the outcome or performance may not be indicative of a student's competence or what they can produce without these confounding pressures. Consequently, while it is possible that the findings of this study may apply to underprepared students and academic tasks in general, the difficulties identified in this study pertain directly to the specific demands of the examination context.

6.1. Micro-level Analysis:

The micro-level results of the present study suggest that while the data from All Essays point to a general relationship between performance and error type/frequency, the results of particular language performance groups do not suggest any specific relationship between these factors and imply that there must be other factors responsible for the mark discrepancies. It is also important to point out that while the first performance group essays scored above 70%, and produced the lowest average frequency of errors compared to the other three performance groups, these essays were not free of surface-level errors. Furthermore, the type and frequency of errors produced by passing and failing students did not differ markedly and could not suggest reasons for their obvious mark disparity. This

indicates that the correction of such errors would make little difference to the substance of the text and that markers are tolerant of surface-level language errors in their assessment of essays.

There does seem to be a relationship, however, between language group and frequency of error, where the ASL and AFL groups made considerably more errors than the English first-language, Afrikaans second-language and EFL groups. This pattern is also evident within the cohesion analysis, where ASL students produced the greatest frequency of cohesion errors, followed by AFL students. Furthermore, there were distinct differences in the type of errors made by these groups, where ASL and AFL students tended to produce more misformation errors than any other type of error, while English first-language, Afrikaans second-language and EFL groups produced a greater frequency of misordering errors. The differences between the generalized difficulties of the various language groups, may be explained by Feuerstein's (1979) concept of cultural difference, where it is possible that African second-language and African foreign-language students experience a greater disjuncture between their own cultural world (prior learning opportunities) and that of the university, compared with students from primarily Eurocentric secondary schools (i.e. English first-language, Afrikaans second-language and European foreign-language students).

It is claimed that a surface strategy approach (Dulay et al., 1982) to error analysis provides an indication of the cognitive processes that underlie the learner's reconstruction of the second-language. It must be noted that errors are not usually the result of laziness or sloppy thinking, but rather reflect an incorrect understanding that has been consistently applied. In

accordance with this claim, the results of the present study indicate that African second-language (ASL) and African foreign-language (AFL) students have difficulty with the formation and structure of English grammatical morphemes, and that students who fail simply have more pervasive problems with these aspects of the language. In contrast, the English first-language and English foreign-language (EFL) data suggest that these students require assistance with the ordering and sequencing of morphemes. While the error analysis may suggest specific linguistic features that students find problematic, it cannot explain why high performing students do better than low performing, since high performing ASL essays still exhibit surface-level errors, i.e. success is not dependent upon error free English. As a result, such an approach to academic writing can not suggest possible entry points for effective mediation. Macro-level analyses have suggested that while linguistic and surface strategy taxonomies may have a pedagogic application, they are limited in the extent to which they can explain difficulties experienced by students. In the present study, where surface errors point to differences across language groups but cannot explain the apparent mark disparity between successful and unsuccessful essays, such taxonomies only point to more fundamental linguistic or conceptual problems.

These problems may take the form of difficulties within the broad system of cohesive ties in the English language. A cohesion error analysis pointed to interesting differences between language groups, where the ASL and AFL groups produced substantially more cohesion errors compared to the EFL, English first-language and Afrikaans second-language groups. Furthermore, while ASL students produced similar types of errors to first-language students, the average number of errors for each of the respective types was substantially greater in the ASL group. In particular, while both groups produced higher frequencies of

reference cohesion errors compared with any other type of error, the average number of reference errors produced by ASL students was almost double that produced by English first-language students. This high proportion of reference errors within the ASL group may possibly be explained by L1 (mother-tongue language) structural interference, where many of the African languages do not have separate pronouns distinct from the nouns they are attached to; for example, the clause 'I am going' in English would be one word in Zulu 'Ngiyahamba'. In contrast, many of the Eurocentric foreign-languages are more similar in structure and form to English and may not, therefore, interfere with or impede language production in the second-language.

The results of a cohesion analysis also suggest that while students' performance may be related to the frequency of cohesion errors at the very top end of the performance categories (i.e. over 70%), in general, there was little correlation between these two elements. Further, the highest ASL performance group still produced a greater number of errors compared with the lowest English first-language performance group, suggesting that cohesion is more strongly related to differences between language groups than performance categories. It was noted that ASL and AFL students displayed a greater frequency of conjunctive and lexical errors than any other language group. These findings are significant in light of two distinct theories. The first relates to Ong's (1982) theory of the differences between the cognition of oral and literate cultures. Among the many differences that Ong outlines, he proposes that thought and expression within oral cultures is "additive rather than subordinative" (1982: 37), such that additive conjunctive structures (and, for example, in other words) form a greater proportion of an oral culture's discourse. In contrast, written discourse relies more heavily on grammatical structure to create meaning, because it does

not have the same ostensible references that participants engaged in verbal dialogue have at their disposal. This study suggests then, that students from historically oral cultures (i.e. ASL and AFL students) may be engaging in academic writing in the same way as they would engage in a verbal conversation. This conclusion is strengthened by an additional finding that ASL students tended to take the essay question at face value and respond to it as though they had been asked directly. As indicated in the results, this response usually takes the form of an introductory line beginning with the pronouns “It” or “They”, where the student is referring back to the “process of natural selection” or “the peppered moth” indicated in the essay question. The second finding, that ASL and AFL students produced a greater average number of lexical errors compared to the other language groups, is significant in light of Wessels’ (1994b) study, which demonstrated that there is a marked relationship between the coherence of a text and the lexical cohesive ties within the text. In particular, Wessels’ (1994b) theory may suggest reasons why ASL and AFL students display poorer levels of coherence in their academic writing compared with other language groups. Furthermore, Wessels’ (1994a, 1994b) study found that more competent writers have better developed conceptual skills and she claims that students could be taught techniques to help them engage with academic text more effectively. Because cohesive errors are not restrictive but may affect the coherence of a text, a macro-level analysis was conducted to gain additional insight into the difficulties ASL students experience with essay structure and topic development. Although ASL students made more micro-level errors compared with English first-language students, these errors cannot account for performance differences and, therefore, cannot provide a full explanation of the academic problems associated with underpreparedness.

6.2. Macro-level Analysis:

A macro-level analysis aimed at uncovering the fundamental problems experienced by ASL students, by extending the analysis beyond the word or sentence to examine the inter-relationships within a text. Some researchers have suggested that students have great difficulty adapting to the conventions and styles of academic writing and, as such, require instruction in the norms of distanced writing. The results of the present study appear to support this conclusion and imply that African second-language (ASL) students in particular, require assistance in identifying the appropriate ways in which to construct meaning in an academic essay.

The results of the present study have pointed to four key features that require attention as regards African second-language students' difficulties with academic writing. These are essay structure, metacognitive control, the development of conceptual principles, and distanced, objective writing. The first of these concerns the structure and form of the academic discourse produced by students. The results of a qualitative coherence analysis suggested that there were distinct differences in the essay structures of particular performance groups as well as language groups. In particular, essays that scored below 2 out of 5 on the coherence scale analysis displayed poor structure and form, a lack of planning, with minimal development of the core issues. Both the basic error analyses and the qualitative analyses suggest that low performing students tend to write down ideas linearly as they think about them, often resulting in overstated redundancies. High performing students' essays, in contrast, show definite structure and planning in their dealings with the various topics or themes. Furthermore, the first performance category of the ASL and AFL groups as well as English first-language, Afrikaans second-language and EFL students,

display more self-corrections in their essays compared with the second, third and fourth ASL and AFL performance categories. This pattern may indicate that certain students are continually thinking about what they have written and returning to correct or modify components that do not cohere with other elements in the text. This process of correction and modification appears to be related to Ong's (1982) notion of redundancy. Ong argues that "thought requires some sort of continuity" (1982: 39). Written discourse achieves this continuity by providing the writer with the means of "backlooping" or retrieving what has been said by reflecting back on the text. This affords a writer the opportunity of returning to elements of the discourse that s/he is unsatisfied with and changing them accordingly. In oral discourse, it is impossible to 'backloop' on a verbal utterance and the mind must attempt to keep track of what has been said. In this context, redundancy or repetition is commonplace and may suggest reasons why ASL students' essays appear to lack a specific structure or form. Difficulties arise because repetition and reiteration violate conventions of precise yet concise communication in academic writing. In addition, the development of central themes and topics is paramount and results from the present study suggest that African second-language students have difficulty striking a balance between overstated redundancies and theme development. These findings support Craig's claim that weak or low performing students "tend to relate to a written task or problem solving situation (the text) linearly - from beginning to end - with each line, word, idea, etc. having equal conceptual weight" (1988: 4). This linear relation to the text limits the extent to which a student can compare and/or co-ordinate spatially separate components of the essay. Feuerstein refers to this as a "blurred and sweeping perception" (1979: 73) and, as Craig (1988) points out, it is this approach to text which restricts the control students have over the expression of ideas or responses. Future research could examine the rough work that

students produce prior to writing an examination essay, to consider whether differences between high performing and low performing students could be related to the degree of planning before writing.

Within a discussion of essay structure, there are three broad characteristics of ASL students' academic writing that require comment. As outlined in the results, it was noted that a proportion of African second-language students presented their essays in point form, as opposed to the standard format of sequenced and linked sentences and paragraphs. This pattern was not identified among first-language, foreign-language or Afrikaans second-language students and appeared to be particularly prominent in the lower performance categories of the ASL group. One of the key aspects of essay writing is the ability to construct precise clauses and/or sentences that cohere with each other and form a larger whole (i.e. paragraph) governed by a particular topic. It was noted that ASL students, in general, did not produce distinctive paragraphs in their essay writing but presented the essay as one piece of written discourse. This can be compared with first- and foreign-language students who divided their essays into sections/paragraphs concerning the separate topics/themes. The use of point form structure by ASL students may point to a second, larger problem of misunderstanding that cuts across all essay questions, with respect to academic terminology. Hubbard (1996) argues that general academic terms are often given less contextual support in academic text, compared with technical terms, because it is assumed that students are on familiar ground. However, as Hubbard's (1996) study indicates, often it is these academic terms which are the most problematic, because students are never explicitly made aware of the demands implicit within this terminology. It appears then, that ASL students may have difficulty understanding what is required of them when

essay questions are phrased using words such as “explain”, “discuss”, “describe” or “illustrate”. As Kilfoil (1996) points out, we assume that students are familiar with general academic terms and concentrate on teaching them subject vocabulary. While essay writing workshops are common place in first-year courses and attempts are made to explain to students the implicit demands of such words, these types of misunderstanding still appear to be evident in first-year academic essays.

The last point to be made concerning the structural difficulties within ASL essays is the use of hyphenation. A large portion of ASL students wrote to the end of a line on the pages provided and then used a hyphen (-) when a whole word did not fit on the line. While the use of hyphenation is not contrary to academic writing conventions, it is interesting to note the position of the hyphen in the ASL essays. There did not appear to be any particular rule governing the way in which ASL students use hyphenation and words were arbitrarily separated once students had reached the end of the line. This pattern was identified across all ASL performance groups, although it was more prominent among the third and fourth performance groups. In contrast, only one English first-language student used a hyphen to separate a word across two lines and this pattern was not exhibited by Afrikaans or Foreign second-language students. The pattern may suggest one of two things. First, it may imply that ASL students are not aware of the syllabic rules governing hyphenation in English and, as such, need to be taught this rule if it interferes with the intelligibility or readability of the essay. Second, the trend may point to a more fundamental problem where students may lack the metacognitive processes controlling the planning of written discourse. The ability to plan involves both pre-planning and organizing the structure of one’s thoughts before writing, as well as monitoring the progress of the essay during the writing process. The

problems associated with metacognitive control relate once again to the distinction of text as spatially organized, while students engage with it in a linear, temporal manner.

This leads to the second significant finding with respect to the difficulties underprepared students experience with academic essay writing, namely metacognitive control. Swart (1995) claims that students in general are not equipped for the writing skill requirements of university. The results of the present study appear to indicate, however, that ASL students, in particular, lack the metacomponents of intelligence (i.e. the ability to plan, monitor and evaluate the development of an essay) and that English first-language, EFL and Afrikaans second-language students do not exhibit the same problems in this area. Metacognitive control includes “knowledge about cognitive tasks... about particular strategies that may be invoked to solve the task... of when and how the strategy should be applied... and about the success and failure of any of these processes” (Strohman Kitchener, 1983: 225). ASL students display a form of random thought which Swart (1995) calls parallel processing, where little attention is given to detail and ideas appear to be haphazardly arranged or sequenced. Such processing is not the result of laziness or sloppiness on the part of the student but, rather, reflects the lack of a systematic approach to knowledge. As mentioned, Swart’s (1995) ideas are closely associated with Strohman Kitchener’s notion of metacognitive control, which involves the controls which individuals employ to plan, organize and monitor their interaction with texts or tasks. It would appear that ASL students from the second, third and fourth performance groups display an apparent lack of these controls, where there is little evidence of any pre-planning or monitoring taking place in their academic writing. In contrast, high performing students in the African second-language group and English first-language students, in general, display ‘serial processing’,

which is characterized by a systematic approach to writing, with specific attention to detail and planning. These findings support Craig's claim that poor or underprepared students do not stand back from or monitor their own analysis to consider the adequacy of the argument or understanding they present. According to Craig, "the inadequacy of their work is manifest in the poor students' inability to enter the 'world' of the text" (1988: 5).

The third prominent difficulty identified within the academic writing of ASL students, concerns the way in which the specific conceptual and theoretical principles of the essay topic were dealt with by students. While these concepts proved difficult for low performance essays in general, the essays of ASL students displayed the greatest impact of this problem. This feature is related to Ong's (1982) concept of a human life-world, where essays in the low performance groups displayed an over reliance on concrete, culture-bound principles as opposed to identifying and explaining the necessary abstract, theoretical constructs. This pattern was particularly noticeable within the ASL group, where students simply explained the peppered moth example and avoided any formal description of the core theoretical or conceptual principles. This trend may be linked to the distinction between the oral and literate backgrounds of different students, where Ong claims that "oral cultures must conceptualize and verbalize all their knowledge with more or less close reference to the human lifeworld" (1982: 42). Literate cultures, in contrast, can distance and decontextualize knowledge in an abstract way. This distinction has also been referred to as 'real world bias', where poor students display an inability to "enter the (formal) logic of an argument without recourse to checking the events against real world experiences" (Craig, 1988: 4). Craig (1988) argues that those students who experience a 'real world bias' tend to use statements such as "I feel/think/know, etc.". Furthermore, weak or underprepared

students exhibit “fixed categories of reasoning” (1988: 4), such that ideas or events are viewed as simple matter of fact objects, which they do not question or critique. This becomes problematic when students are required to engage with objects of knowledge that lack physical or concrete properties.

This leads to a further area of difficulty which supports Stevenson’s (1994) claim that low performing students need to be taught about the norms of distanced writing. The ASL group showed a distinctive tendency towards using phrases such as “I think...”, “in my opinion...”, “I studied...” or “we looked at...”, etc. This pattern was not found as frequently in English first-language, Afrikaans second-language or Foreign second-language students. Applying Ong’s framework of the differences between orality and literacy, it would seem that ASL students are more inclined to be “empathetic and participatory rather than objectively distanced” (1982: 45). Ong (1982) argues that while oral learning requires a ‘hands on’ approach, writing divides the knower from the known and introduces conditions for objectivity or distance. In certain disciplines, this approach to academic writing may be encouraged, however, as has been mentioned previously, the generally accepted form of expression in academic circles is distanced and objective. If we were to accept Moll and Slonimsky’s (1989) position, the results of the present study might indicate that ASL students have simply not mobilised the particular skills necessary for academic essay writing, specifically the ability to write in a distanced, objective manner, the ability to structure and plan an academic essay, and the ability to develop and monitor central themes within the essay. However, the qualitative analysis and overall findings of this study suggest that a more pervasive problem exists among ASL students, that exceeds the difficulties associated with academic writing conventions.

In particular, the results of the present study indicate that ASL students may lack appropriate development of the level of cognition that Strohm Kitchener (1983) labels epistemic cognition. Essay writing can be viewed as an ill-structured problem; that is, a problem that does not have one single solution or answer but that is open-ended in nature. Such ill-structured problems require a sophisticated level of cognitive functioning that includes the ability to abstract, monitor one's own thought processes and ask questions about the truth or certainty of knowledge. It is only through the development of epistemic cognition that students will understand the assumptions of academic tasks and be able to employ the appropriate strategies to solve them. As has been established, African second-language students appear to have great difficulty identifying and selecting the appropriate first-level skills required to complete open-ended tasks. This is emphasized by Craig's (1988) finding that poor or underprepared students often do not recognize that an essay question is prompting the student to discuss and compare various perspectives or arguments. Such students tend to adopt one position at the expense of any other perspective. Furthermore, while this kind of cognition allows individuals to solve new and novel problems, students must first recognize a situation as unfamiliar before new ways of thinking about it are possible. Therefore, while ASL students may present with a number of common difficulties in academic writing, the task is not to point their attention to these problem areas in a 'show and tell' kind of fashion, but rather to try and provoke students into recognizing for themselves the areas in which they require mediation and assistance. This is based on the idea that students' 'misunderstanding' is a form of absolute understanding⁵, where they may not recognize that they are experiencing difficulty in a particular area and, consequently, do not seek mediation. In this context, the mediators (be

⁵ Personal communication with R. Miller, 1999.

they first order, 'flesh and blood' tutors, or second order, mediational academic tasks) need to 'seek out' the areas of difficulty or misunderstanding that students are experiencing and provide the kinds of provocative questioning students cannot ask for themselves, that will ultimately lead to the realization that students are required to approach university knowledge in a new way.

Chapter 7: Conclusions

Ong's (1982) framework of the distinctions between the thought processes of essentially oral and literate cultures has provided a good basis from which to understand the difficulties experienced by African second-language (ASL) students in relation to academic essay writing. Furthermore, the framework may also suggest reasons for the differences evident across the ASL and AFL language groups, compared with the English first-language, Afrikaans second-language and European foreign-language groups. In particular, the ASL students in this study appeared to rely on features central to oral thought, including features of additive, redundant and participatory thought, while consistently relating the conceptual ideas/ principles of Natural Selection to items 'close to the human life-world' (i.e. the peppered moth example). In contrast, English first-language students tended to consistently impose subordinative, analytical, and objective thought to the ideas and principles of the essay topic. These students did not rely on the example to explain the process of natural selection but, instead, devoted a large portion of their essays to describing and defining the abstract theoretical principles of variation, competition and inheritance. In this context, it would appear that there are three main areas in which mediation can take place with regard to the academic writing of underprepared students; namely linguistic competence, academic writing conventions, and the specific epistemic assumptions of university knowledge.

This study has made use of different levels of language analyses in an attempt to gain insight into the cognitive processes common to underprepared students. The findings indicate that these language levels do not exist independently of one another and that any attempt at solving problems specific to underpreparedness requires attention to the language system as

a whole. While academic support programmes that are based purely on improving linguistic competence have proven *not* to be a comprehensive form of mediation required at a tertiary level, the present study has indicated that some of the most fundamental difficulties ASL students present with in academic essay writing, stem from incompetence with the English second-language. Furthermore, while many of the difficulties identified may occur in other second-language groups (for example, African foreign-language), the extent of the problems that ASL students experience seem to be more pervasive and far-reaching. An effective teaching strategy requires that learners are exposed to the target language not only at sentence level, but rather develop an understanding of how genres are organised at discourse level (Moyo, 1995). Effective mediation and intervention with regard to the academic writing of underprepared students, therefore, needs to be directed at the development of cohesion and coherence within students' essays. As Wessels (1993a, 1994b) points out, this type of mediation is best combined with content- or subject-based programmes, so that students feel they are getting something worthwhile out of their efforts. Particular attention needs to be given to the grammatical structures that affect the readability and comprehensibility of students' writing and this may be achieved by discussing relevant examples taken from their own essays (Hubbard, 1989; Moyo, 1995). By making the categories of the five-way framework explicit to students, a better understanding of the English cohesive system is possible and students would become competent and familiar with the second-language. This automation of the syntactic rules of the English language would facilitate second-language students, because the mind would not be preoccupied with achieving linguistic correctness, thus allowing for more time to be spent on the development of meaning within the text (Widdowson, 1983). This kind of intervention places more responsibility on the lecturer/teacher and requires that diversified

teaching methods be adopted. In particular, lecturers need to be able to employ various techniques and approaches depending on the kinds of language assistance that students need (Dreyer, 1995). Difficulties with topic or theme development may be overcome using an intervention system that teaches students to track their own essays. Topical structure analysis (Lautamatti, 1987) allows students to graphically represent and track each of the central themes or topics of a text by looking at sentence sequencing and the building of meaning across sentences. Furthermore, as was outlined in an earlier study (Sear, 1998), a system of continuous assessment may provide part of the solution to the difficulties ESL students exhibit under examination conditions, by eradicating some of the confounding variables that impact on student performance.

The second form of mediation that should take place involves an explication of the implicit rules or conventions that characterise academic writing. As Hubbard (1996) points out, students appear to experience difficulty with general academic terms in text because writers frequently assume that these terms are known/common to readers. Students need to be taught what the expectations are when confronted with terms such as “discuss”, “describe”, “explain”, or “illustrate”. As Craig argues, if open universities are going to accommodate a changed society, “we are compelled to make explicit the usually implicit rules of the game to those who come with different rules” (1989: 171). Furthermore, intervention is required to assist students in the norms of distanced writing, where they are taught to present arguments and information in an objective, analytical manner, as opposed to presenting a personal, subjective opinion on a particular topic. Learners need to be encouraged to revise and ‘backloop’ on their written texts to “discover what in their texts does not conform to L2 discourse conventions” (Moyo, 1995: 171).

Craig (1988) claims that epistemic cognition is mostly neglected in academic support programmes, yet “this is probably the most important area for improving those skills, knowledge and competencies demanded by the tasks typically encountered at university level” (1988: 5). She proposes that a detailed, specific analysis be undertaken in all courses and disciplines, which attempts to “make explicit the contentless processes underlying the content of the disciplines/courses taught at university” (Ibid). This type of mediation has already been implemented within the Psychology I course, in the form of re-structured module texts, specific tasks to guide students’ engagement, as well as the two, previously mentioned, core texts, namely the *Conceptual dictionary* and *A guide to learning*. Adopted in conjunction with subject-specific material, and with the added assistance of tutors or first-order mediators, students will be given the benefit of learning and constructing relevant subject knowledge, while simultaneously gaining a broader understanding of the way in which knowledge and meaning is created at a university level. Furthermore, the input that students receive from lecturers and tutors is also a vital means of mediation and tutors need to be trained in ways to provoke new levels of thought (cognition) in students. As Aristotle proposed “it is in the answers to questions that our knowledge consists” .

Possibilities for future research in the area of underpreparedness are limitless and may concentrate in one of a number of focus areas. However, the present study indicates two particular possibilities for further research; first, where the same analyses could be conducted on the term essays/assignments of the same set of students, to investigate whether any differences occur in the difficulties exhibited by underprepared students. Second, where specific intervention programmes could be implemented to guide students in

the conventions of academic writing and the way in which cohesion and coherence is achieved in written discourse, investigations could explore whether such programmes may improve the relatively poor performance of African second-language students.

Finally, while Shakespeare may have regarded reading and writing as natural products of the mind, it is important to remember that they are, in fact, cultural inventions that have to be learned and mastered with the help of others. In this regard, we have a social responsibility to ensure that those people who have been intentionally disadvantaged in this area, receive the appropriate mediation and assistance to reverse the situation.

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APPENDICES

APPENDIX 1:

The following pages contain the individual results and scores for the three sets of linguistic analyses that were undertaken. These have been divided into:

Table 1: Basic Error Analysis Results for

- a: African Second-Language (ASL) student 1-100
- b: English First-Language student 1-30
- c: Afrikaans Second-Language student 1-4
- d: Foreign Second-Language (FSL) student 1-15

Table 2: Cohesion Analysis Results for

- a: African Second-Language (ASL) student 1-100
- b: English First-Language student 1-30
- c: Afrikaans Second-Language student 1-4
- d: Foreign Second-Language (FSL) student 1-15

Table 3: Coherence Scale Analysis Results for

- a: African Second-Language (ASL) student 1-100
- b: English First-Language student 1-30
- c: Afrikaans Second-Language student 1-4
- d: Foreign Second-Language (FSL) student 1-15

Table 1a (1-20):

Results of African Second-Language Essays' Error Analysis, using Surface Strategy Taxonomy and Linguistic Classification

African Second-Language	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Percentage (%)	100	100	90	90	90	85	85	80	80	80	80	75	75	75	70	70	70	70	70	70
OMISSION:	3	4	10	5	2	2	7	7	14	13	5	7	7	1	2	7	7	11	9	5
1) omission		2	2	3		1	5	3	1	1	3	3	2	1		1	1	2	4	2
2) ellipsis			1																	
3) reference		1	5		2			2	11	5	1	3	3		1	4	5	8	4	3
4) determiner	3	1	2	2		1	2	2	2	7	1	1	2		1	2	1	1	1	
ADDITION:	3	2	2	3		4	3	6	4	4	1	2	4	1		3	1	2	2	4
1) redundancy	3	1		3		3	2	4	1	3	1	2	1	1		1		2	2	3
2) circumlocution			1			1		1	2				2				1			
3) anaphoric reference		1	1				1	1	1	1			1			2				1
MISFORMATION:	6	10	7	18	5	19	15	12	16	16	11	14	12	7	16	15	12	20	14	14
1) tense (+ copula)	2	4		4		1	2	4	2	1	4	3	3	1	3	1	4	8	4	4
2) word form	2	1	3	7	1	7	5	2	6	4	1	2	2		2	4	3	3	3	2
3) determiner			1	1			2	1			2	3	1	2	2	1		2	2	1
4) concord		1		1		2	3		4	4	1		1		2	1	1	3		
5) relatives	1	2	1	1		2	1	1	1	2		2		3	3	2			2	
6) lexis	1	2	1	3	1	6	1	2	3	1		1	2	1	2	4	1	3	1	3
7) split infinitive					1								1							1
8) preposition			1	1	2	1	1	2		4	3	3	2		2	2	3	1	2	3
MISORDERING:	16	10	13	9	18	19	18	15	16	12	21	18	15	19	17	15	19	9	15	18
1) word order	1			1	1	1	3	3	1	3	1	3	1	2	2	2		1	2	1
2) punctuation	15	9	10	8	17	17	15	10	15	8	18	11	12	14	12	12	16	7	11	10
3) conjunction		1	3			1		2	4	1	2	4	2	3	3	1	3	1	2	7
TOTAL NO. OF ERRORS:	28	26	32	35	25	44	43	40	50	45	38	41	38	28	35	40	39	42	40	41

Table 1a continued (21-40):

Results of African Second-Language Essays' Error Analysis, using Surface Strategy Taxonomy and Linguistic Classification

African Second-Language	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Percentage (%)	70	70	70	70	70	65	65	65	65	60	60	60	60	60	60	60	60	55	55	55
OMISSION:	3	2	6	7	5	4	5	11	7	6	6	4	12	13	14	12	9	8	7	6
1) omission	2	1	2	4	2	1		1		2	2	2	5	3	4	1	1	2	4	2
2) ellipsis															1					
3) reference	1	1	3	2	2	2	3	5	5	3	2		2	5	3	6	1	3		2
4) determiner			1	1	1	1	2	5	2	1	2	2	5	5	6	5	7	3	3	2
ADDITION:	5	4	4	3	2	1	1	2	2	2	2	1	7	6	3	5	2	5	8	1
1) redundancy	3	2	2	1	2				2	1	1	1	4	4	2	4	2	1	6	1
2) circumlocution	2	1	1	2		1		1		1	1		1	1	1	1		1	2	
3) anaphoric reference		1	1				1	1					2	1				3		
MISFORMATION:	7	23	15	21	12	17	20	23	12	19	12	15	21	27	20	15	17	16	35	20
1) tense (+ copula)	1	7	5	4	2	3	5	4	4	3	2	2	3	2	3	2	2	5	12	7
2) word form	1	2	1	6	4	2	1	7	2	4	3	5	5	10	2	2	6	2	5	5
3) determiner	2	5	1			2	4	3	2	3	1	1	4	2	1	2	2	1	3	
4) concord		2		1		1		1		1		1	2	2	2			4	4	4
5) relatives		1	3	1	2	3	3		1	3	1	2		3	4	4	4		1	1
6) lexis	1	4	4	4	1	3	2	5	1	2	2	1	3	5	7	3	1		4	3
7) split infinitive								1			1		1							1
8) preposition	2	2	1	5	2	3	5	2	2	3	2	3	3	3	1	2	2	4	5	
MISORDERING:	19	19	16	15	18	17	14	12	18	15	14	13	18	22	26	17	22	22	11	12
1) word order	1	1	1	1	1	2	2	1			2	1	1	2	4	1	1	3	2	1
2) punctuation	14	12	11	12	14	13	11	9	16	12	10	10	11	14	18	14	20	15	7	9
3) conjunction	4	6	4	2	3	2	1	2	2	3	2	2	6	6	4	2	1	4	2	2
TOTAL NO. OF ERRORS:	34	48	41	46	37	39	40	48	39	42	34	33	58	68	63	49	50	51	61	39

Table 1a continued (41-60):

Results of English Second-Language Essays' Error Analysis, using Surface Strategy Taxonomy and Linguistic Classification

African Second-Language	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Percentage (%)	55	50	50	50	50	50	50	50	50	50	45	45	45	45	45	45	45	40	40	40
OMISSION:	8	11	10	7	5	12	6	8	10	11	6	10	8	13	4	8	12	11	7	3
1) omission	2	3	4		2	2	1	2	3	3	2	4	1	1	1	3	4	2	1	1
2) ellipsis	1								1	1				1						
3) reference	3	5	5	3	3	10	5	6	4	4	2	3	1	10	2	1	4	5	3	1
4) determiner	2	3	1	4					2	3	2	3	6	1	1	4	4	4	3	1
ADDITION:	4	7	6	5	7	2	6	1	6	4	3	10	2	9	4	6	2	5	4	3
1) redundancy	3	2	2	3	6	1	3		4	3	2	5	2	5	1	4	2	2		2
2) circumlocution	1	2	1			1	2	1	1	1	1	3		2	2	2		1	2	
3) anaphoric reference		3	3	2	1		1		1			2		2	1			2	2	1
MISFORMATION:	31	20	17	14	12	22	24	14	11	10	19	30	18	30	19	21	8	28	21	12
1) tense (+ copula)	6	4	7	3	2	4	6	3	1	1	5	9	8	9	4	5	1	6	4	4
2) word form	10	2	3	2	2	3	4	3	3		3	4	4	5	3	2	2	3	3	1
3) determiner	1	1	1	2	2	1	3			4		5	1	9	3	3	1	3		
4) concord	2	3	3			2	2	4	1	1	3	1	2		4	2		5	5	1
5) relatives	2	3	1	2	1	3	1	1	1	1		1			2	2	1	2	1	3
6) lexis	6	4	2	3	1	5	4	2	4	2	3	5		7	1	4	2	4	4	2
7) split infinitive											1							1		
8) preposition	4	3		2	4	4	4	1	1	1	4	5	3		2	3	1	4	4	1
MISORDERING:	20	19	21	17	20	18	10	22	16	14	17	22	16	17	12	16	19	21	19	21
1) word order	1	2		2		1	2	1	2	2	3	3			1	2	3	3	3	1
2) punctuation	12	13	12	11	16	13	5	15	12	9	11	16	14	9	10	11	14	14	12	15
3) conjunction	7	4	9	4	4	4	3	6	2	3	3	3	2	8	1	3	2	4	4	5
TOTAL NO. OF ERRORS:	63	57	54	43	44	54	46	45	43	39	45	72	44	69	39	51	41	65	51	39

Table 1a continued (61-80):

Results of African Second-Language Essays' Error Analysis, using Surface Strategy Taxonomy and Linguistic Classification

African Second-Language	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Percentage (%)	40	40	40	40	40	40	40	40	40	40	35	35	35	35	35	30	30	30	30	30
OMISSION:	10	7	9	15	7	11	10	13	12	15	10	10	12	15	4	5	10	9	10	7
1) omission		3	2	3	2	3	3	4	4	4	3	2	3	6	2	1	4	3	3	2
2) ellipsis				1								1								
3) reference	9		6	8	4	4	3	7	7	6	5	4	5	5		3	3	5	4	3
4) determiner	1	4	1	3	1	4	4	2	1	5	2	3	4	4	2	1	3	1	3	2
ADDITION:	1		2	3	4	1	5	9	8	6	5	3	7	8	18	2	5	6	7	10
1) redundancy			1	2	1	1	2	7	5	3	1	3	4	3	11	1	2		3	5
2) circumlocution	1		1	1			2	2	1	2	3		2	4	2		1	2	1	3
3) anaphoric reference					3		1		2	1	1		1	1	5	1	2	4	3	2
MISFORMATION:	11	18	16	20	16	14	26	29	21	25	18	20	17	22	32	25	26	25	22	15
1) tense (+ copula)	2	6	2	3	4	1	4	6	1	5	3	4	3	4	9	7	6	5	4	4
2) word form	1		3	3	2	3	2	2	4	3	2	4	2	3	9	2	3	5	4	1
3) determiner	1	5	4	2	3	3	4	7	6	3	1	3	1	2	3	1	4	4	3	3
4) concord	2	3	1	2	2	1	5	2	2	1	3	1	2	2	3	3	5	4	2	
5) relatives	1	2	1	5	1	3	3	1	3	6	6	2	7	4	3	2		1	1	3
6) lexis	1	1	2	2	1		4	4	4	3	1	3	1	2	3	5	5	3	3	2
7) split infinitive			1					1		1		1				1				
8) preposition	3	1	2	3	3	3	4	6	1	3	2	2	1	5	2	4	3	3	5	2
MISORDERING:	22	15	15	16	13	20	29	22	15	19	20	15	26	20	16	17	14	21	19	22
1) word order	3	3	1	3	3	2	3	2	2	3	2	2	3	2	1		3	2	2	3
2) punctuation	15	10	9	9	6	15	18	14	10	12	16	10	18	16	13	12	10	15	15	17
3) conjunction	4	2	5	4	4	3	8	6	3	4	2	3	5	2	2	5	1	4	2	2
TOTAL NO. OF ERRORS:	44	40	42	54	40	46	70	73	56	65	53	48	62	65	70	49	55	61	58	54

Table 1a continued (81-100):

Results of African Second-Language Essays' Error Analysis, using Surface Strategy Taxonomy and Linguistic Classification

African Second-Language	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Percentage (%)	30	30	30	30	30	30	25	25	25	25	25	25	20	20	20	20	20	15	15	10
OMISSION:	10	15	6	7	10	6	9	13	10	12	10	8	8	7	9	14	6	5	6	5
1) omission	2	7	1	3	3	1	3	6	3	1	2	2	3	2	3	4		1	1	1
2) ellipsis				1	1					1										
3) reference	4	4	2	1	2	3	3	4	4	6	5	4	3	4	3	6	3	3	2	2
4) determiner	4	4	3	2	4	2	3	3	3	4	3	2	2	1	3	4	3	1	3	2
ADDITION:	5	5	9	14	6	4	13	7	5	5	3	3	6	2	4	8	2	5	3	2
1) redundancy	3	4	6	6	3	3	7	4	3	3	2	3	2		2	6	1	2	3	1
2) circumlocution	2	1		4	3	1	5	2	2		1		1		1	2	1	1		1
3) anaphoric reference			3	4			1	1		2			3	2	1			2		
MISFORMATION:	18	22	24	18	24	25	20	30	28	23	19	28	24	28	25	21	24	20	26	17
1) tense (+ copula)	4	8	5	6	8	7	6	9	7	5	5	8	5	7	7	4	6	4	7	4
2) word form		2	4	1	2	3	1	2	3	2	2	4	2	3	2	3	2	1	1	2
3) determiner	3	1	1		3	2	4	2	4	4	4	3	3	1	4	3	5	4	5	3
4) concord		3	1	2	1	2	2	4	2	4	2	3	2	4	6	5	2	7	4	4
5) relatives	3	5	6		2	4	4	3	7	4	3	4	4	4	3	2	3		4	1
6) lexis	3	1	5	7	4	4	1	5	2	3	2	3	3	5		1	2	1	1	1
7) split infinitive	1				1			1	1						1					
8) preposition	4	2	2	2	3	3	2	4	2	1	1	3	5	4	2	3	4	3	4	2
MISORDERING:	17	18	15	19	22	14	22	20	19	16	19	22	17	23	21	25	21	19	20	15
1) word order	1	4	1	2	2		2	1	2	2	3	2	1	5	1	4	3	3	2	1
2) punctuation	15	12	10	11	18	13	16	16	16	10	12	18	12	14	18	19	14	12	15	13
3) conjunction	1	2	4	6	2	1	4	3	1	4	4	2	4	4	2	2	4	4	3	1
TOTAL NO. OF ERRORS:	50	60	54	58	62	49	64	70	62	56	51	61	55	60	59	68	53	49	55	39

Table 1b (1-15):

Results of English First-Language Essays' Error Analysis, using Surface Strategy Taxonomy and Linguistic Classification

English First-Language	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Percentage (%)	100	100	95	90	85	80	75	70	70	70	70	65	65	65	60
OMISSION:	3	2	2	2		1	3	3		1	2	8	4	1	
1) omission	2		1				2	1				2	1	1	
2) ellipsis												1			
3) reference	1			2			1	1		1		5	3		
4) determiner		2	1			1		1			2				
ADDITION:					2		1		4	1	2		1		2
1) redundancy					1		1		4	1	2		1		1
2) circumlocution					1										1
3) anaphoric ref.															
MISFORMATION:	8	5	2	2	8	6	6	6	7	4	2	3	5	4	2
1) tense (+ copula)			1					2	1			1	1	1	
2) word form	1	3	1		1	1	2	1							1
3) determiner	1				2	3						1	2	1	
4) concord	1							1	1						
5) relatives	1	2		1	1		2	1	1	3				1	
6) lexis	3					1	1	1	2	1	1	1	1		
7) split infinitive					1										
8) preposition	1			1	3	1	1		2		1		1	1	1
MISORDERING:	9	9	11	11	14	4	11	9	10	9	14	15	16	6	10
1) word order					1			1	2		3		2		2
2) punctuation	7	7	10	7	10	3	11	7	6	6	11	12	9	5	7
3) conjunction	2	2	1	4	3	1		1	2	3		3	5	1	1
TOTAL NO. OF ERRORS:	20	16	15	15	24	11	21	18	21	15	20	26	26	11	14

Table 1b continued (16-30):

Results of English First-Language Essays' Error Analysis, using Surface Strategy Taxonomy and Linguistic Classification

English First-Language	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Percentage (%)	60	60	55	55	50	50	50	50	45	45	45	40	40	30	30
OMISSION:	3	1	2	1	1	1	2	5	1	2	7	4	5		5
1) omission		1		1		1		1			1		1		3
2) ellipsis								1							
3) reference	1		1		1		2	3	1	1	5	3	3		2
4) determiner	2		1							1	1	1	1		
ADDITION:	1		1	3	2		1	1		1	1	2	1		2
1) redundancy	1		1	2	2			1		1	1	1	1	1	1
2) circumlocution				1											1
3) anaphoric ref.							1					1			
MISFORMATION:	9	4	5	5	5	6	4	4	5	6	3	5	6	2	5
1) tense (+ copula)			2	1		2		2		1				1	1
2) word form	2			1	2								1	1	1
3) determiner		2	1	1	2		1		1		1	2	2		
4) concord	3								1			1			
5) relatives	1		1			1			1	3	1				1
6) lexis		1	1			1	3	1	2	1		2			
7) split infinitive	3			2	1								1		
8) preposition		1				2		1		1	1		2		2
MISORDERING:	8	9	5	13	10	15	10	12	5	14	13	11	10	13	13
1) word order				1						1	2	1	1		2
2) punctuation	7	8	4	12	8	12	8	10	4	12	9	8	8	11	8
3) conjunction	1	1	1		2	3	2	2	1	1	2	2	1	2	3
TOTAL NO. OF ERRORS:	21	14	13	22	18	22	17	22	11	23	24	22	22	17	23

Table 1c:

Results of Afrikaans Second-Language Essays' Error Analysis, using Surface Strategy Taxonomy and Linguistic Classification

Afrikaans second-language	1	2	3	4
Percentage (%)	100	70	60	40
OMISSION:	1	3	3	4
1) omission		2		1
2) ellipsis			1	2
3) reference	1	1	2	1
4) determiner				
ADDITION:			1	1
1) redundancy				1
2) circumlocution			1	
3) anaphoric reference				
MISFORMATION:	6	3	7	11
1) tense (+ copula)	1		2	1
2) word form			2	3
3) determiner				2
4) concord	1			2
5) relatives				
6) lexis	1	2	1	2
7) split infinitive	1		1	
8) preposition	2	1	1	1
MISORDERING:	21	12	12	14
1) word order		1	2	1
2) punctuation	18	8	8	10
3) conjunction	3	3	2	3
TOTAL NO. OF ERRORS:	27	18	23	30

Table 1d:

Results of Foreign Second-Language Essays' Error Analysis, using Surface Strategy Taxonomy and Linguistic Classification

Foreign Second-Language	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Percentage (%)	80	80	80	70	60	60	50	45	40	40	40	40	35	25	15
			*	*	*					*	*	*	*	*	*
OMISSION:	5	4	4	7	6	8	5	10	11	6	11	9	7	6	5
1) omission	3	2	2	3	2	4	2	3	2	4	3	2	3	2	1
2) ellipsis							2								
3) reference		2	1	3	2	2	1	4	3	2	4	4	3	1	2
4) determiner	2		1	1	2	2		3	6		4	3	1	3	2
ADDITION:	2	2	1	4	3	1	2	3	4	1	2	6	1	4	1
1) redundancy	2	1			1		1	2	1			2	1	1	
2) circumlocution		1		2	1				1		1	1			
3) anaphoric reference			1	1	1	1	1	1	2	1	1	3		2	1
MISFORMATION:	8	8	9	10	22	6	16	14	13	20	23	21	25	24	14
1) tense (+ copula)	2	2	3	2	5	2	2	4	4	5	7	1	5	4	3
2) word form		2	1	1	1		3	1		3	3	3	4	3	1
3) determiner	1				2	1		2			3	3	3	1	
4) concord	1		1	3	4		2	4	2	4	4	4	5	4	4
5) relatives	1	2		1	3	1	2	2	1	4	3	3		4	1
6) lexis	2	2	2	2	3	2	5	1	5	1	2	4	4	6	3
7) split infinitive	1				1				1	1					
8) preposition			2	1	3		2	1		2	1	3	4	2	2
MISORDERING:	15	9	17	12	19	10	16	15	27	18	20	16	17	12	10
1) word order	1	2	3	2	2		1	1	2	3	2	3	1	1	
2) punctuation	12	6	13	7	14	9	12	10	21	14	15	10	11	10	9
3) conjunction	2	1	1	3	3	1	3	4	4	1	3	3	5	1	1
TOTAL NO. OF ERRORS:	30	23	31	33	50	25	39	42	55	45	56	52	50	46	30

* indicates African Foreign-Language student

Table 2a (1-20):

Results of a Cohesion Analysis on African Second-Language Essays, according to a Five-way Classification Framework

African Second-Language	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Percentage (%)	100	100	90	90	90	85	85	80	80	80	80	75	75	75	70	70	70	70	70	70	
Reference Cohesion:	4	6	10	7	8	10	10	11	14	18	14	12	10	5	8	9	11	12	6	9	
- pronominal	1	2	2	1	3	1	2	1	3	3	1	4	3	1	1	2	3	4	1	3	
- demonstrative	1	2	7	6	2	8	3	6	10	9		3	3	4	4	5	4	6	5	5	
- comparative	2	2	1		3	1	5	4	1	6	13	5	4		3	2	4	2		1	
Ellipsis Cohesion:			1														1				
Substitution Cohesion:	2	2		1	1		2	1	1	2		2	2	3	3	3	1	1	1	3	
- nominal	1	2		1	1		1		1	1		2	2	2	2	2		1		2	
- verbal	1						1	1		1				1	1	1	1			1	1
Lexical Cohesion:	1	1	1	2		2		3	1	2		1	2	3	2	1	1	3	1	2	
- synonymy	1		1	1		1		1		1			2	2			1	1	1	1	
- hyponymy																					
- collocation		1		1		1		2	1	1		1		1	2	1		2		1	
Conjunctive Cohesion:	4	6	9	6	7	5	9	10	11	6	1	11	8	9	7	4	9	10	3	6	
- additive	3	3	5	2	1	2	3	3	4	3		5	1	2	4	2	3	4	1	3	
- adversative					1		2	3	1			2	3	2	1		2				
- causal	1	2	2	2	3	1	2	3	3	1	1	1	4	3	1		2	3	2	2	
- temporal		1	2	2	2	2	2	1	3	2		3		2	1	2	2	3		1	
TOTAL NO. OF ERRORS:	11	15	21	16	16	17	21	25	27	28	15	26	22	20	20	17	23	26	11	20	

Table 2a continued (21-40):

Results of a Cohesion Analysis on African Second-Language Essays, according to a Five-way Classification Framework

African Second-Language	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Percentage (%)	70	70	70	70	70	65	65	65	65	60	60	60	60	60	60	60	60	55	55	55
Reference Cohesion:	9	10	13	8	10	9	8	12	11	9	10	17	8	10	16	13	10	9	14	16
- pronominal	2	2	1	4	2	3	2	3	3	1	2	3	2	2	4	4	2	4	2	4
- demonstrative	6	7	4	1	8	3	3	7	6	4	5	12	4	5	8	8	7	3	8	9
- comparative	1	1	8	3		3	3	2	2	4	3	2	2	3	4	1	1	2	4	3
Ellipsis Cohesion:			2		1										1			1		1
Substitution Cohesion:	1	1	3	1	2	4	3	2	3	3	2	2	4	1	1	2	1	4		1
- nominal	1		1	1	1	2	1	2	2	2	2	1	2		1	2	1	2		1
- verbal		1	2		1	2	2		1	1		1	2	1				2		
Lexical Cohesion:	2	3	3	3	1	2		1	2		2	2	3	2	3	4	2	2	1	2
- synonymy	1	1	2	2	1	1			1		1	1	1	2	1	2	1	2		
- hyponymy																1				
- collocation	1	2	1	1		1		1	1		1	1	2		2	1	1		1	2
Conjunctive Cohesion:	9	8	10	5	9	10	11	9	10	11	7	6	7	10	8	9	9	11	8	9
- additive	4	3	4	3	5	4	5	3	4	5	2	3	3	4	3	4	5	4	5	4
- adversative	1	1	2	1	1	4	2		2	3			1	1	2	1	2	3	1	2
- causal	3	3	1		1	2	2	4	3	1	5	2	3	3	1	1	1	3		1
- temporal	1	1	3	1	2		2	2	1	2		1		2	2	3	1	1	2	2
TOTAL NO. OF ERRORS:	21	22	31	17	23	25	22	24	26	23	21	27	22	23	29	28	22	27	23	29

Table 2a continued (41-60):

Results of a Cohesion Analysis on African Second-Language Essays, according to a Five-way Classification Framework

African Second-Language	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Percentage (%)	55	50	50	50	50	50	50	50	50	50	45	45	45	45	45	45	45	40	40	40
Reference Cohesion:	17	11	12	19	16	16	11	11	15	13	9	12	11	10	14	7	11	11	11	17
- pronominal	4	3	3	4	1	2	1	3	1	2	3	3	4	2	1	1	1	3	5	5
- demonstrative	6	5	4	14	12	10	7	7	10	7	3	7	5	3	10	4	5	3	5	8
- comparative	7	3	5	1	3	4	3	1	4	4	3	2	2	5	3	2	5	5	1	4
Ellipsis Cohesion:																				
Substitution Cohesion:	1	3	2	1		1	2	1	2	3	3	2	2	2	2	3	1	2	1	3
- nominal		3	1			1			1	2	3	2		2	1	2	1	2		1
- verbal	1		1	1			2	1	1	1			2		1	1			1	2
Lexical Cohesion:	3	1	1	3	4	2	3	2	2	3	2	2	3	3	3	4	1	4	2	
- synonymy	1		1	2	2	2	1	1	1	2		2	2	3	2	3	1	2	2	
- hyponymy																				
- collocation	2	1		1	2		2		1	1	2		1		1	1		2		
Conjunctive Cohesion:	12	15	8	8	9	11	8	7	8	13	12	8	10	6	8	8	10	13	10	9
- additive	3	5	3	4	4	2	2	1	3	4	3	3	3	2	3	3	3	4	5	3
- adversative	3	4	1		1	2		1	1	2	3		3		2	1				1
- causal	2	4	2	2	3	5	4	2	4	5	3	3	4	3	2	1	5	5		3
- temporal	4	2	2	2	1	2	2	3		2	3	2		1	1	3	2	4	2	2
TOTAL NO. OF ERRORS:	33	30	23	31	29	30	24	21	27	32	26	24	26	21	27	22	23	30	24	29

Table 2a continued (61-80):

Results of a Cohesion Analysis on African Second-Language Essays, according to a Five-way Classification Framework

African Second-Language	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Percentage (%)	40	40	40	40	40	40	40	40	40	40	35	35	35	35	35	30	30	30	30	30
Reference Cohesion:	13	9	13	15	15	10	15	16	13	11	10	12	14	12	13	8	10	9	8	10
- pronominal	4	3	3	5	4	2	4	3	2	1	3	2	3	3	4	2	1	4	1	2
- demonstrative	6	6	7	7	6	5	10	10	8	7	6	9	7	6	5	3	5	4	5	5
- comparative	3		3	3	5	3	1	3	3	3	1	1	4	3	4	3	4	1	2	3
Ellipsis Cohesion:				1																1
Substitution Cohesion:	3	2	1	2	3	2	3	2	2	3		1	3	2	3		2	2	3	2
- nominal	2	2	1	1	2	1	2	1	2	1		1	2	2	1		1	2	2	
- verbal	1			1	1	1	1	1		2			1		2		1		1	2
Lexical Cohesion:	3	1	1	1	2	3	3	2	3	3	1	2	3	3	2	2	3	4	4	3
- synonymy	2	1		1	1	1	2	1	1	1	1	1	2	2	2	1	2	2	1	1
- hyponymy								1												
- collocation	1		1		1	2	1		2	2		1	1	1		1	1	2	3	2
Conjunctive Cohesion:	9	10	8	9	13	8	10	9	12	7	10	12	12	11	9	10	9	11	9	7
- additive	4	5	4	3	3	3	4	4	4	2	5	5	4	4	3	4	3	4	3	3
- adversative		2	1	2	2			1	1		1	1	2	1	1	4	2	5		1
- causal	2	2	1	1	4	3	4	3	5	4	3	4	5	2	3		3	1	3	3
- temporal	3	1	2	3	4	2	2	1	2	1	1	2	1	4	2	2	1	1	3	
TOTAL NO. OF ERRORS:	28	22	23	28	33	23	31	29	30	24	21	27	32	28	27	20	24	26	24	23

Table 2a continued (81-100):

Results of a Cohesion Analysis on African Second-Language Essays, according to a Five-way Classification Framework

African Second-Language	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Percentage (%)	30	30	30	30	30	30	25	25	25	25	25	25	20	20	20	20	20	15	15	10
Reference Cohesion:	13	9	15	11	10	12	14	8	15	11	10	6	10	7	12	9	8	9	10	5
- pronominal	3	2	5	2	4	4	4	2	4	3	4	2	2	3	3	2	1	2	3	
- demonstrative	6	5	6	4	4	5	6	4	7	5	6	2	3	3	5	4	4	4	6	3
- comparative	4	2	4	5	2	3	4	2	4	3		2	5	1	4	3	3	3	1	2
Ellipsis Cohesion:						1	1								2	1				
Substitution Cohesion:	3	1	2	2	1	3	1	1		2	1	2	2	1	3	2	2			
- nominal	2	1	1	2		2	1			1	1	1	2	1	2	2	1			
- verbal	1		1		1	1		1		1		1			1		1			
Lexical Cohesion:		1	2	3	2	3	3	2	3	2		1	3	3	2	3	1	1	2	1
- synonymy			1	2	1	3	2	2	1	2		1	1	2		1				1
- hyponymy							1													
- collocation		1	1	1	1				2				2	1	2	1	1	1	2	
Conjunctive Cohesion:	14	8	11	11	10	8	10	9	12	11	10	10	12	9	9	10	9	7	8	6
- additive	6	1	3	5	5	2	4	4	5	5	4	2	5	4	3	4	4	3	3	2
- adversative	1		2	1	2	1	1		2	1		2	2		2	1	1	1		
- causal	4	5	4	4	3	3	3	3	2	4	2	5	2	2	3	2	2	2	2	2
- temporal	3	2	2	1		2	2	2	3	1	4	1	3	2	1	3	2	1	3	2
TOTAL NO. OF ERRORS:	30	19	30	27	23	27	29	20	30	26	21	19	27	20	28	25	20	17	20	12

Table 2b (1-15):

Results of a Cohesion Analysis on English First-Language Essays, according to a Five-way Classification Framework

English First-Language	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Percentage (%)	100	100	95	90	85	80	75	70	70	70	70	65	65	65	60
Reference Cohesion	5	4	2	7	6	2	7	6	1	6	2	5	5	6	9
- pronominal	1	1						1	1				1	1	1
- demonstrative	4	3	1	2	6		5	3		1	1	4	3	1	6
- comparative			1	5		2	2	2		5	1	1	1	4	2
Ellipsis Cohesion:															
Substitution Cohesion:				1		2			3		3	3			1
- nominal											1	2			
- verbal				1		2			3		2	1			1
Lexical Cohesion:		1			1		2	1	2		1	2	1		1
- synonymy		1			1			1	2			1	1		1
- hyponymy												1			
- collocation							2				1				
Conjunctive Cohesion:	3	2	3	2	6	1	1	6	4	6	3	4	7	2	1
- additive	1	1		1	3		1	3		1			3		
- adversative						1		1	2		1	1			1
- causal	2	1	3	1	3			2	1	4	2	3	3	2	
- temporal									1	1			1		
TOTAL NO. OF ERRORS:	8	7	5	10	13	5	10	13	10	12	9	14	13	8	12

Table 2b continued (16-30):

Results of a Cohesion Analysis on English First-Language Essays, according to a Five-way Classification Framework

English First-Language	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Percentage (%)	60	60	55	55	50	50	50	50	45	45	45	40	40	30	30
Reference Cohesion:	8	8	6	3	5	3	7	7	5	9	11	11	7	6	4
- pronominal	1	1	1	1	1	1	2	1		1	1	1	1		2
- demonstrative	5	4	4		3	2	4	4	3	6	10	5	4	1	2
- comparative	2	3	1	2	1		1	2	2	2		5	2	5	
Ellipsis Cohesion:								1							
Substitution Cohesion:	1	1		1	1		2	1	2	1	3		3	2	
- nominal	1	1	1		1		1	1	1	1	3		1	1	
- verbal				1			1		1				2	1	
Lexical Cohesion:	1	1	1	2		3	1		1	1	1	2		1	1
- synonymy	1			1		1			1		1	1		1	
- hyponymy															
- collocation		1	1	1		2	1			1		1			1
Conjunctive Cohesion:	7	3	3	4	4	5	4	2	1	5	5	3	4	4	5
- additive	3	1	1	2	1	1	1			1	2	1	2	2	2
- adversative	1		1	1		3					1				
- causal	1	1	1	1	2		2	1		2	2	2		1	2
- temporal	2	1			1	1	1	1	1	2			2	1	1
TOTAL NO. OF ERRORS:	17	13	10	10	10	11	14	11	9	16	20	16	14	13	10

Table 2c:

Results of a Cohesion Error Analysis according to a Five-way Classification Framework

Afrikaans Second-Language	1	2	3	4
Percentage (%)	100	70	60	40
Reference Cohesion:	7	7	4	11
- pronominal	1	1		3
- demonstrative	4	3	3	7
- comparative	2	3	1	1
Ellipsis Cohesion:			1	
Substitution Cohesion:	1	2	4	1
- nominal	1	1	2	1
- verbal		1	2	
Lexical Cohesion:	1			2
- synonymy				1
- hyponymy				
- collocation	1			1
Conjunctive Cohesion:	2	2	6	3
- additive	1		1	2
- adversative				
- causal	1	2	2	
- temporal			3	1
TOTAL NO. OF ERRORS:	11	11	15	17

Table 2d:

Results of a Cohesion Error Analysis on Foreign Second-Language Essays, according to a Five-way Classification Framework

Foreign Second-Language	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Percentage (%)	80	80	80	70	60	60	50	45	40	40	40	40	35	25	15
			*	*	*					*	*	*	*	*	*
Reference Cohesion:	4	5	6	6	7	3	4	4	6	7	7	8	8	6	3
- pronominal	3	3	1	1	2	2	3	3	4	4	3	2	2		
- demonstrative	1	1	4	3	2	1			1	3	3	2	3	3	2
- comparative		1	1	2	3		1	1	1		1	4	3	3	1
Ellipsis Cohesion:	1									1					
Substitution Cohesion:		1	2	1	2	2	1	2	1	2	3	2	3	3	1
- nominal		1	1	1	2			1	1	1	2	2	2	2	1
- verbal			1			2	1	1		1	1		1	1	
Lexical Cohesion:	1		2	1	3				1	1	2	3	3	2	
- synonymy			1		1					1		1	2		
- hyponymy															
- collocation	1		1	1	2			1		2	2	1	2		
Conjunctive Cohesion:	5	4	6	4	7	4	5	5	6	7	8	6	8	7	8
- additive	1	1	2	1	3		2	1	1	1	1		2	2	2
- adversative	1				1		2	1	2	2	2	2			1
- causal	2	2	2	2	1	2	1	3	1	3	3	3	4	2	3
- temporal	1	1	2	1	2	2			2	1	2	1	2	3	2
TOTAL NO. OF ERRORS:	11	10	16	12	19	9	10	11	14	18	20	19	22	18	12

* indicates African Foreign-Language student

Table 3a:Results of a Coherence Analysis on African Second-Language essays, using a Scale ranging from 1-5

ESSAY NO.	SCALE NO.	ESSAY NO.	SCALE NO.	ESSAY NO.	SCALE NO.	ESSAY NO.	SCALE NO.	ESSAY NO.	SCALE NO.
1	5	21	3.5	41	4	61	3	81	1.5
2	4.5	22	3.5	42	3	62	3.5	82	3
3	3	23	2	43	3.5	63	3.5	83	1.5
4	3.5	24	3	44	3	64	2	84	2
5	4.5	25	3	45	3	65	1.5	85	2.5
6	4	26	3	46	3.5	66	3.5	86	2
7	3	27	2.5	47	2.5	67	2	87	2
8	4	28	3	48	2.5	68	2.5	88	2.5
9	2.5	29	3.5	49	2	69	2	89	1.5
10	2.5	30	2.5	50	2	70	3	90	2
11	4.5	31	3	51	2.5	71	3	91	2
12	3	32	4.5	52	3.5	72	2.5	92	3
13	3.5	33	4	53	3	73	2.5	93	2
14	3.5	34	3	54	3.5	74	1.5	94	2.5
15	3.5	35	2.5	55	3.5	75	2	95	1
16	4	36	2.5	56	3.5	76	2.5	96	1
17	3.5	37	3.5	57	3.5	77	3	97	1
18	3.5	38	3	58	3	78	2.5	98	1
19	4	39	3	59	3	79	2.5	99	1.5
20	3.5	40	3	60	2	80	2.5	100	1

Table 3b:

Results of a Coherence analysis on English First-Language Essays, using a Scale ranging from 1-5

ESSAY NO.	SCALE NO.	ESSAY NO.	SCALE NO.
1	5	16	3.5
2	4.5	17	2
3	4.5	18	3.5
4	3	19	2.5
5	4	20	3
6	4	21	2
7	4	22	4
8	3.5	23	3
9	3.5	24	3.5
10	3	25	4
11	4	26	3
12	4	27	2.5
13	3.5	28	2.5
14	3.5	29	3
15	2.5	30	2

Table 3c:

Results of a Coherence Analysis on Afrikaans Second-Language Essays, using a Scale ranging from 1-5

ESSAY NO.	SCALE NO.
1	5
2	4.5
3	3
4	2.5

Table 3d:

Results of a Coherence Analysis on Foreign Second-Language Essays, using a Scale ranging 1-5

ESSAY NO.	SCALE NO.
1	4.5
2	4
3*	3
4*	3.5
5*	3
6	3.5
7	3
8	3.5
9	3
10*	2
11*	1.5
12*	2
13*	1.5
14*	1
15*	1

* indicates African Foreign-Language student

APPENDIX 2:

Table 7a represents the error analysis results for the separate language divisions within the ESL group (119), namely 100 ASL students, 4 Afrikaans second-language students, and 15 Foreign second-language students.

Table 7a: Results of an Error Analysis for ESL, ASL, Afrikaans second-language, and FSL Essays

Language Group	Performance category	n	AVE.	Range	Omission			Addition			Misformation			Misordering			Total Errors
					Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	
ENGLISH SECOND-LANGUAGE (ESL)	Total	119	47.1	18-73	937	7.9	17	473	4	8	2149	18.1	38	2051	17.2	37	5610
	Over 70%	31	36.1	18-50	175	5.6	16	78	2.5	7	381	12.3	34	485	15.6	43	1119
	<65% and >50%	29	46.2	23-68	234	8.1	17	103	3.6	8	515	17.8	38	487	16.8	37	1339
	<45% and >35%	32	52	30-73	300	9.4	18	146	4.6	9	638	19.9	38	580	18.1	35	1664
	below 30%	27	55.1	30-70	228	8.4	15	146	5.4	10	615	22.8	41	499	18.5	34	1488
AFRICAN SECOND-LANGUAGE (ASL)	Total	100	49.1	25-73	822	8.2	17	434	4.3	9	1889	18.9	38	1769	17.7	36	4914
	over 70%	25	38.2	25-50	151	6	16	69	2.8	7	337	13.5	35	399	15.9	42	956
	<65% and >50%	25	48	33-68	212	8.5	18	96	3.8	8	464	18.6	39	430	17.2	36	1202
	<45% and >35%	25	53.8	39-73	242	9.7	18	128	5.1	10	511	20.4	38	463	18.5	34	1344
	below 30%	25	56.5	39-70	217	8.7	15	141	5.6	10	577	23.1	41	477	19.1	34	1412
AFRIKAANS SECOND-LANGUAGE	Total	4	24.8	18-30	11	2.8	11	2	0.5	2	27	6.8	27	59	14.8	60	99
	over 70%	2	22.5	18-27	4	2	9	0	0	0	9	4.5	20	33	16.5	72	46
	<65% and >50%	1	23	23	3	3	13	1	1	4	7	7	30	12	12	52	23
	<45% and >35%	1	30	30	4	4	13	1	1	3	11	11	37	14	14	47	30
	below 30%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FOREIGN SECOND-LANGUAGE (FSL)	Total	15	39.8	23-56	104	6.9	17	37	2.5	6	233	15.5	39	223	14.9	37	597
	Over 70%	4	29.3	23-33	20	5	17	9	2.3	8	35	8.8	30	53	13.3	45	117
	<65% and >50%	3	38	25-50	19	6.3	17	6	2	5	44	14.7	39	45	15	39	114
	<45% and >35%	6	48.3	42-56	54	9	19	17	2.8	6	116	19.3	40	103	17.2	36	290
	below 30%	2	38	30-46	11	5.5	14	5	2.5	7	38	19	50	22	11	29	76

Table 7b represents the error analysis results for the separate language divisions within the Foreign second-language group (15), namely 6 European foreign-language students and 9 African foreign-language students.

Table 7b: Results of an Error Analysis for FSL, EFL, and AFL Essays

Language Group	Performance category	n	AVE.	Range	Omission			Addition			Misformation			Misordering			Total Errors
					Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	
FOREIGN SECOND-LANGUAGE (FSL)	Total	15	39.8	23-56	104	6.9	17	37	2.5	6	233	15.5	39	223	14.9	37	597
	Over 70%	4	29.3	23-33	20	5	17	9	2.3	8	35	8.8	30	53	13.3	45	117
	<65% and >50%	3	38	25-50	19	6.3	17	6	2	5	44	14.7	39	45	15	39	114
	<45% and >35%	6	48.3	42-56	54	9	19	17	2.8	6	116	19.3	40	103	17.2	36	290
	below 30%	2	38	30-46	11	5.5	14	5	2.5	7	38	19	50	22	11	29	76
EUROPEAN FOREIGN-LANGUAGE (EFL)	Total	6	34	23-55	43	7.2	12	14	2.3	7	65	10.8	32	82	13.7	40	204
	over 70%	2	26.5	23-30	9	4.5	17	4	2	8	16	8	30	24	12	45	53
	<65% and >50%	2	32	25-39	13	6.5	20	3	1.5	5	22	11	34	26	13	41	64
	<45% and >35%	2	43.5	42-55	21	10.5	24	7	3.5	8	27	13.5	31	32	16	37	21
	below 30%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AFRICAN FOREIGN-LANGUAGE (AFL)	Total	9	43.7	30-56	61	6.8	16	23	2.6	6	168	18.7	43	141	15.7	36	393
	over 70%	2	32	31-33	11	5.5	17	5	2.5	8	19	9.5	30	29	14.5	45	64
	<65% and >50%	1	50	50	6	6	12	3	3	6	22	22	44	19	19	38	50
	<45% and >35%	4	50.8	45-56	33	8.3	16	10	2.5	5	89	22.3	44	71	17.8	35	203
	below 30%	2	38	30-46	11	5.5	14	5	2.5	7	38	19	50	22	11	29	76

Table 8a represents the cohesion analysis results for the separate language divisions within the ESL group (119), namely 100 ASL students, 4 Afrikaans second-language students, and 15 Foreign second-language students.

Table 8a: Results of an Cohesion Analysis for ESL, ASL, Afrikaans second-language and FSL Essays

Language Group	Performance category	n	AVE	Range	Reference			Ellipsis			Substitution			Lexical			Conjunctive			Total Error
					Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	
ENGLISH SECOND-LANGUAGE (ESL)	Total	119	22.5	9-33	1223	10.3	46	18	0.2	0.7	205	1.7	8	234	2	9	1002	8.4	37	2682
	Over 70%	31	18.8	10-31	279	9	48	6	0.2	1	50	1.6	9	42	1.4	7	205	6.6	35	582
	<65% and >50%	29	24.3	9-33	331	11.4	47	4	0.1	0.6	46	1.6	7	67	2.3	10	256	8.8	36	704
	<45% and >35%	32	24.3	11-32	355	11.1	46	2	0.1	0.3	67	2.1	9	69	2.2	9	286	8.9	37	779
	below 30%	27	22.9	12-30	258	9.6	42	6	0.2	1	42	1.6	7	56	2.1	9	255	9.4	41	617
AFRICAN SECOND-LANGUAGE (ASL)	Total	100	24.1	11-33	1110	11.1	46	15	0.2	0.6	171	1.7	7	212	2.1	9	899	9	37	2407
	over 70%	25	20.4	11-31	244	9.8	48	5	0.2	1	43	1.7	8	37	1.5	7	182	7.3	36	511
	<65% and >50%	25	26	21-33	313	12.5	48	3	0.1	0.5	37	1.5	6	64	2.6	10	231	9.4	36	651
	<45% and >35%	25	26.3	21-32	304	12.2	46	1	0.04	0.2	53	2.1	8	57	2.3	9	243	9.7	37	658
	below 30%	25	23.5	12-30	249	9.9	42	6	0.2	1	38	1.5	6	54	2.2	9	240	9.6	41	587
AFRIKAANS SECOND-LANGUAGE	Total	4	13.5	11-17	29	7.25	54	1	0.3	2	8	2	15	3	0.8	6	13	3.3	24	54
	over 70%	2	11	11	14	7	64	0	0	0	3	1.5	14	1	0.5	5	4	2	18	22
	<65% and >50%	1	15	15	4	4	27	1	1	7	4	4	27	0	0	0	6	6	40	15
	<45% and >35%	1	17	17	11	11	65	0	0	0	1	1	6	2	2	12	3	3	18	17
	below 30%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FOREIGN SECOND-LANGUAGE (FSL)	Total	15	14.7	9-22	84	5.6	38	2	0.1	0.9	26	1.7	12	19	1.3	9	90	6	41	221
	Over 70%	4	12.3	10-16	21	5.3	43	1	0.3	2	4	1	8	4	1	8	19	4.8	39	49
	<65% and >50%	3	12.7	9-19	14	4.7	37	0	0	0	5	1.7	13	3	1	8	16	5.3	42	38
	<45% and >35%	6	17.3	11-22	40	6.7	38	1	0.2	1	13	2.2	13	10	1.7	10	40	6.7	38	104
	below 30%	2	15	12-18	9	4.5	30	0	0	0	4	2	13	2	1	7	15	7.5	50	30

Table 8b represents the cohesion analysis results for the separate language divisions within the Foreign second-language group, namely 6 European foreign-language students and 9 African foreign-language students.

Table 8b: Results of Foreign Second-Language, European Foreign-Language and African Foreign-Language Cohesion Analysis

Language Group	Performance category	n	AVE	Range	Reference			Ellipsis			Substitution			Lexical			Conjunctive			Total Errors
					Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	Tot.	Ave.	%	
FOREIGN SECOND-LANGUAGE (FSL)	Total	15	14.7	9-22	84	5.6	38	2	0.1	0.9	26	1.7	12	19	1.3	9	90	6	41	221
	Over 70%	4	12.3	10-16	21	5.3	43	1	0.3	2	4	1	8	4	1	8	19	4.8	39	49
	<65% and >50%	3	12.7	9-19	14	4.7	37	0	0	0	5	1.7	13	3	1	8	16	5.3	42	38
	<45% and >35%	6	17.3	11-22	40	6.7	38	1	0.2	1	13	2.2	13	10	1.7	10	40	6.7	38	104
	below 30%	2	15	12-18	9	4.5	30	0	0	0	4	2	13	2	1	7	15	7.5	50	30
EUROPEAN FOREIGN-LANGUAGE (EFL)	Total	6	10.8	9-14	26	4.3	40	1	0.2	2	7	1.2	11	2	0.3	3	29	4.8	45	65
	over 70%	2	10.5	10-11	9	4.5	43	1	0.5	5	1	0.5	5	1	0.5	5	9	4.5	43	21
	<65% and >50%	2	9.5	9	7	3.5	37	0	0	0	3	1.5	16	0	0	0	9	4.5	47	19
	<45% and >35%	2	12.5	11-14	10	5	40	0	0	0	3	1.5	12	1	0.5	4	11	5.5	44	25
	below 30%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AFRICAN FOREIGN-LANGUAGE (AFL)	Total	9	17.3	12-22	58	6.4	37	1	0.1	0.6	19	2.1	12	17	1.9	11	61	6.8	39	156
	over 70%	2	14	16-22	12	6	43	0	0	0	3	1.5	11	3	1.5	11	10	5	36	28
	<65% and >50%	1	19	19	7	7	37	0	0	0	2	2	11	3	3	16	7	7	37	19
	<45% and >35%	4	19.8	18-22	30	7.5	38	1	0.3	1	10	2.5	13	9	2.3	11	29	7.3	37	79
	below 30%	2	15	12-18	9	4.5	30	0	0	0	4	2	13	2	1	7	15	7.5	50	30

Table 9a represents the coherence scale analysis results for the separate language divisions within the ESL group (119), namely 100 ASL students, 4 Afrikaans second-language students, and 15 Foreign second-language students.

Table 9a: Results of an Coherence Scale Analysis for ESL, ASL, Afrikaans second-language and FSL Essays

Language Group	Performance category	n	range	AVE	5	4.5	4	3.5	3	2.5	2	1.5	1
ENGLISH SECOND- LANGUAGE (ESL)	Total	119	1-5	2.4	2	6	7	24	29	20	16	8	7
	Over 70%	31	2-5	3.6	2	5	5	10	6	2	1	0	0
	<65% and >50%	29	2-4.5	3	0	1	2	5	13	6	2	0	0
	<45% and >35%	32	1.5-3.5	2.7	0	0	0	9	7	5	7	4	0
	below 30%	27	1-3	1.9	0	0	0	0	3	7	6	4	7
AFRICAN SECOND- LANGUAGE (ASL)	Total	100	1-5	2.8	1	4	6	21	24	19	14	6	5
	over 70%	25	2-5	3.5	1	3	4	9	5	2	1	0	0
	<65% and >50%	25	2-4.5	3	0	1	2	4	10	6	2	0	0
	<45% and >35%	25	1.5-3.5	2.8	0	0	0	8	6	4	5	2	0
	below 30%	25	1-3	1.9	0	0	0	0	3	7	6	4	5
AFRIKAANS SECOND- LANGUAGE	Total	4	2.5-5	3.9	1	1	0	0	1	1	0	0	0
	over 70%	2	4.5-5	4.8	1	1	0	0	0	0	0	0	0
	<65% and >50%	1	3	3	0	0	0	0	1	0	0	0	0
	<45% and >35%	1	2.5	2.5	0	0	0	0	0	1	0	0	0
	below 30%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FOREIGN SECOND- LANGUAGE	Total	15	1-4.5	2.7	0	1	1	3	4	0	2	2	2
	Over 70%	4	3-4.5	3.8	0	1	1	1	1	0	0	0	0
	<65% and >50%	3	3-3.5	3.2	0	0	0	1	2	0	0	0	0
	<45% and >35%	6	1.5-3.5	2.3	0	0	0	1	1	0	2	2	0
	below 30%	2	1	1	0	0	0	0	0	0	0	0	2

Table 9b represents the coherence scale analysis results for the separate language divisions within the Foreign second-language group, namely 6 European foreign-language students and 9 African foreign-language students.

Table 9b: Results of Foreign Second-Language, European Foreign-Language and African Foreign-Language Coherence Scale Analysis

Language Group	Performance category	n	range	AVE	5	4.5	4	3.5	3	2.5	2	1.5	1
EUROPEAN FOREIGN-LANGUAGE (EFL)	Total	6	3-4.5	3.6	0	1	1	2	2	0	0	0	0
	over 70%	2	4-4.5	4.3	0	1	1	0	0	0	0	0	0
	<65% and >50%	2	3.5	3.5	0	0	0	2	0	0	0	0	0
	<45% and >35%	2	3	3	0	0	0	0	2	0	0	0	0
	below 30%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AFRICAN FOREIGN-LANGUAGE (AFL)	Total	9	1-3.5	2.1	0	0	0	1	2	0	2	2	2
	over 70%	2	3-3.5	3.3	0	0	0	1	1	0	0	0	0
	<65% and >50%	1	3	3	0	0	0	0	1	0	0	0	0
	<45% and >35%	4	1.5-2	1.8	0	0	0	0	0	0	2	2	0
	below 30%	2	1	1	0	0	0	0	0	0	0	0	2
FOREIGN SECOND-LANGUAGE	Total	15	1-4.5	2.7	0	1	1	3	4	0	2	2	2
	Over 70%	4	3-4.5	3.8	0	1	1	1	1	0	0	0	0
	<65% and >50%	3	3-3.5	3.2	0	0	0	1	2	0	0	0	0
	<45% and >35%	6	1.5-	2.3	0	0	0	1	1	0	2	2	0
	below 30%	2	3.5	1	0	0	0	0	0	0	0	0	2

APPENDIX 3:

Essay Question:

Explain the process of natural selection and illustrate your answer by using the example of the peppered moth of Britain. (10 marks)

Model Answer:

The essays were marked out of a total of ten (10) marks. Four (4) marks were assigned to the description of the process of natural selection, which included the principles of variation, competition and inheritance. Three (3) marks were allocated to the illustration of the peppered moth example, while a further three marks were awarded for linking the principles of natural selection to the example. A copy of the model answer, briefly outlining the key issues students were required to include in their essays, is included below.

SECTION C: OPEN-ENDED QUESTIONS

20 marks

Question 1:

Explain the process of natural selection and illustrate your answer by using the example of the peppered moth of Britain. (10 marks)

Define and Describe (4 marks)

Overarching definition: Natural selection involves the selection of a character / trait best suited to the environment (1) OR survival of the fittest (1/2 mark)

Definition / description of variation must include the idea that there are inherent differences between individuals within a particular species (1)

Definition of competition: students must emphasize that there is competition for scarce resources (1)

Inheritance: the characters that best fit a particular environment (i.e. allow for survival) are passed on through reproduction / genetically from parents to offspring (1)

Illustration (3)

Variation in the peppered moths of Britain occurs in the colour of the moths. There are two variations; light and dark (1)

Prior to the industrial revolution, white moths best camouflaged against pale bark of the trees and were, therefore, more plentiful than dark moths, who were susceptible to predation (1)

After the industrial revolution, trees became blackened by soot and a different character (i.e. dark colour) became selected (1)

Link (3)

Students must link and structure the factors involved, in such a way as to demonstrate the inevitable process of natural selection (2). For example, in the context of competition, some moths/individuals will be advantaged over other individuals, due to inherent variation. Those

individuals/moths best suited / best 'fit' with the environment survive and reproduce, so this character is passed on.

Students must link the moth illustration explicitly to the larger description of natural selection (1) and the three core principles of variation, competition and inheritance (perhaps by using the terms explicitly or by integrating the example in the explanation).

The key issue is that the definition of natural selection and the illustration of the moth example should not read as two separate answers.