

**LANGUAGE INTERVENTION TO FACILITATE THE ACQUISITION OF ENGLISH AS
A SECOND LANGUAGE BY PRE-SCHOOL CHILDREN.**

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ABSTRACT

LANGUAGE INTERVENTION TO FACILITATE THE ACQUISITION OF ENGLISH AS A SECOND LANGUAGE BY PRE-SCHOOL CHILDREN.

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This dissertation explores the role of the speech-language therapist in second language acquisition. The motivation for the study arose out of recent political changes in South Africa, which led to desegregated education, and the need for young children to cope with English as the medium of instruction from the start of their schooling. The aim was to determine whether language intervention provided by a speech-language therapist significantly improved the English proficiency of a group of black pre-school children. A pre-test, post-test, control group experimental design was employed. The comprehension and expression of English vocabulary and syntax of thirty, three to six year old subjects was assessed using a modified version of the Test of Auditory Comprehension of Language-Revised (Carrow, 1988), a newly devised vocabulary measure, as well as Crystal's (1982) Profile in Lexical Semantics, and the Language Assessment Remediation and Screening Procedure (Crystal et al, 1989).

III

The results showed that the English proficiency of the group of children who received language intervention from a speech-language therapist, improved significantly more than that of the first control group, who received only additional input in English, and the second control group, who received no input beyond that provided through the regular pre-school programme. The positive results of this research can now be applied to the teaching of languages other than English, and the training of teachers who would like to improve their skills at facilitating language acquisition.

DECLARATION

I declare that this dissertation is my own, unaided work. It is being submitted for the degree of Master of Arts in Speech-Language Pathology to the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other University.



HEILA LETITIA JORDAAN

31st day of August, 1993

In Memory of my Mother

Lettie Welgemoed

1915 - 1987

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ABBREVIATIONS

L1	First Language
L2	Second Language
ESL	English Second Language
SLA	Second Language Acquisition
B.O.L.D.	Bilingual Oral Language Development
T.A.C.L. R.	Test of Auditory Comprehension of Language-Revised
L.A.R.S.P.	Language Assessment Remediation and Screening Procedure
P.R.I.S.M.-L.	Profile in Lexical Semantics
ANOVA	Analysis of Variance

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CHAPTER 1

INTRODUCTION

This research study was concerned primarily with the role of the speech-language therapist in the area of second language acquisition.

The multilingual nature of South African society has compelled the profession of speech-language pathology in this country to address the appropriate management of communicatively disordered clients who are bilingual, or speak languages other than English or Afrikaans. However, speech-language therapists, have not, as a rule, been involved in the domain of second language acquisition, in South Africa, or in any other country. Some authors (Gillcrest, 1981; Koenig and Biel, 1989; Adler, 1988; Duncan, 1989) have argued that speech-language therapists possess the knowledge and skills to facilitate second language acquisition in educational contexts. However, as far as can be established, there have been no empirical investigations into the role of speech-language therapists in second language teaching. The present study aims to determine whether speech-language therapists are indeed effective in facilitating the acquisition of a second language, by young children. During the pre-school period, from birth to approximately 6 years of age, most children acquire their first language with ease, and the process goes largely unnoticed.

However, it is when children fail to acquire language, or demonstrate significant delays in the development of linguistic skills, that those around them become concerned, and may seek professional advice. The assessment and treatment of these children, who are language impaired, falls squarely in the domain of the speech-language therapist, who is highly skilled in developing communicative competence in children. If the intervention approach with these children who have not acquired language, is effective in developing their linguistic competence, then it must be applicable to facilitating the acquisition of a second language by children who have normal language learning abilities. Speech-language therapists have extensive knowledge of normal language acquisition in young children, and have developed intervention strategies that replicate the natural acquisition process. These intervention strategies are based on an understanding of the nature of language, and the factors both in the child and in the environment that interact, to result in the development of this uniquely human phenomenon.

The role of the speech-language therapist in second language acquisition should ideally, be consultative in nature. Appropriate teacher training would be the logical extension of a positive outcome of the present study. Knowledge and skills could be imparted to teachers, through in-service training courses or workshops held specifically for this purpose.

Of course, Speech-Language Therapists, working in educational contexts, could provide group intervention themselves, along the lines of traditional language stimulation groups. This was the approach adopted in this study.

The specific focus in this study was on black pre-school children, who spoke a variety of African languages, and were acquiring English as a second (or third) language.

The rationale for concentrating on this group of second language learners, stems from the challenges posed by current educational reforms in South Africa, a country characterized by racial, ethnic, cultural and linguistic diversity.

1.1. The Challenge of Current Educational Reform in South Africa
Until 1990, the policy of the Nationalist Government was one of separatism (apartheid). Racial, and therefore also language groups were segregated with regard to every institution of society, including education.

There were, and still are, separate education departments and schools for Blacks, Coloureds, Indians and Whites, and for speakers of the two official languages, English and Afrikaans. None of the indigenous African languages were afforded official status, or used as languages of instruction beyond the fourth year of schooling (standard two) (McDonald, 1990).

There was insufficient financial support for the development of text books and teaching materials in these languages, and many of the problems experienced by black children in the Department of Education and Training (D.E.T) schools, were related to language policy. The 1976 Soweto uprisings were in response to the use of Afrikaans as medium of instruction in these schools.

After this, the majority of black schools adopted English as the medium of instruction from standard three onwards (South African Institute of Race Relations Report 88/89). The problems associated with this policy have been thoroughly investigated by the Human Sciences Research Council in the Threshold Project (McDonald, 1990) and will not be discussed further.

The results of the present study may, however, be important, if a recent decision to introduce early immersion education into D.E.T. schools, is implemented. The parent communities of a large number of D.E.T. schools have voted in favour of English as the medium of instruction from the first grade (Hofmeyer, 1992). Many of the children are not exposed to English at all before entering school, and would need to acquire it rapidly and efficiently before being able to cope with formal instruction.

Since 1990, South Africa has moved into a transitional period politically, and racial integration in traditionally white, state-aided schools is occurring rapidly. Many black South Africans regard competence in English as essential for social, economic and political advancement.

Their aspirations for their children centre around fluency in English, to ensure a sound education, and the prospect of financial independence. It is not surprising then, that English medium schools have enrolled substantial numbers of black children over the past three years (Metcalfe, 1991).

Inherent in this move to racial integration in schools are many cultural and linguistic issues, not least of which is the pervasive nature of language in the social adjustment and academic achievement of children.

According to van Kleeck and Richardson (1988) the critical importance of language in child development is often alluded to in the literature on the various functions of language. Three general functions can be distinguished. The first relates to the role of language in developing and maintaining social relationships between parent and child, as well as in peer interactions. The instrumental, regulatory, interactional, and imaginative functions of language (Halliday, 1969) are relevant here. Making friends and interacting co-operatively with peers is an important part of any child's education. Parker (1986) identified several conversational processes that are highly related to friendship building, including: clarity of communication and contingency (especially responses to requests for clarification), establishment of joint play activities, amicable resolution of conflicts and disclosure of thoughts.

Language is used to understand humour, tease, learn the rules of games, and understand and use peer group slang (van Kleeck and Richardson, 1988). Children who are not proficient in the school language may understandably experience difficulties with these functions and consequently with social relationships.

The second function of language relates to the development of self concept and encompasses the personal function of language (Halliday, 1969). Two aspects of self concept were distinguished by William Jones (cited in van Kleeck and Richardson, 1988) - the social self and the private self. The latter refers to one's inner thoughts, feelings and intentions. With regard to second language acquisition, the role of language in the development of the private self is not as important as its function in the development of the social self. The child's first language, provided it is well established and continues to develop, will serve the development of the private self. Development of the social self requires that the child acquire the competence to adjust his/her language to function in various social roles.

This is part of the acquisition of sociolinguistic competence in a second language (Kessler, 1984; Bachman, 1990; Canale and Swain, 1980). Children who lack exposure to English and have not had the opportunity to socialize with native speakers, may have difficulties in developing a social self in a predominantly English environment.

The third function of language relates to success in the academic environment (van Kleeck and Richardson, 1988) and is represented by the heuristic and representational functions of language (Halliday, 1969). Using language to learn (heuristic) and to convey information (representational) is what schools are about. Language is the primary medium of formal education in western culture (van Kleeck and Richardson, 1988). Limited proficiency in the language of the school may result in academic difficulties.

In the educational context, the distinction between contextualized and de-contextualized language is regarded as fundamental to understanding the nature of children's language and literacy development (Cummins, 1991). A variety of terms are used by different authors, but essentially, a distinction is made between the extent to which the meaning being communicated is supported by contextual cues, or is dependant on linguistic cues only. Bruner (1975) refers to communicative and analytic competence, Olson (1977) to utterance and text, Donaldson (1978) to embedded and disembedded thought and language, and Cummins (1991) to conversational and academic language proficiency.

There is considerable evidence to support this distinction between basic interpersonal communication skills (BICS) and cognitive academic language proficiency (CALP) (Cummins, 1991) in the acquisition of a second language. Several investigators report that it takes at least four years for children to attain the same level of academic language proficiency in the second language as their monolingual peers (Cummins, 1981; Cummins and

Nakajima, 1987; Collier, 1987). Peer appropriate conversational skills (BICS) are usually attained within a much shorter period (approximately 2 years) (Cummins, 1984; Snow and Hoefnagel-Hohle, 1978).

Children acquire conversational competence through exposure to language that is embedded in concrete, daily life experiences. As they enter school, there are increasing demands to derive meaning from the linguistic code alone, in understanding the teacher's language, and the language of textbooks. There are many language-related skills involved in coping with instructional language, but one of the most important is metalinguistic awareness (van Kleeck and Richardson, 1988). Metalinguistic awareness may be defined as the ability to treat language itself as an object of thought, as opposed to simply using the linguistic system to comprehend and produce sentences (Tunmer and Herriman, 1984). Children who have developed metalinguistic skills will be able to reflect consciously on various properties of a second language, which will facilitate their acquisition to some extent.

For pre-schoolers, who are only in the first stage of developing metalinguistic awareness (van Kleeck, 1984), and are unable to focus on the linguistic code as an object of study, the only means to acquire a second language is through purposeful, interpersonal communication. It seems obvious that children need to learn language, and become aware of language (i.e. develop metalinguistic ability), before they can use language to learn.

Since pre-school children are unable to decentre, cognitively, and thus deal with more than one aspect of a situation at the same time (van Kleeck, 1984), they cannot use language to learn, while they are still in the process of acquiring language.

The speech-language therapist's skill in creating intervention contexts that focus on natural context-embedded communication, would thus be effective in developing interpersonal communication in this age group.

In addition, language intervention strategies can be applied to facilitate the acquisition of any language, with any group of first language learners. The only requirement would be an interventionist who is competent in the target language, and in creating an appropriate intervention context. This is particularly relevant at present, when widely diverse groups of South Africans are seeking reconciliation. Young children of all races should be encouraged to learn each other's languages. If white children, for example, were to become more proficient in an African language, at an early age, this would help to counteract the assimilationist perspective (Banks, 1986) which characterizes the current racial integration in South African schools, and which, it is feared, will further entrench existing inequality (Heugh, 1993). Assimilationist ideology, according to Banks (1986), creates expectations that children, who do not belong to western culture, will forsake their own cultural identity and adapt to the existing language, curriculum, and ideals of the school.

There are strong arguments against assimilation, and for, an anti-bias, multi-cultural model of education in a future South Africa (National Education Policy Initiative, 1992). This would entail a number of paradigm shifts, including: adding ethnic content to the curriculum, reducing personal and institutional racism within schools, introducing educational programmes that reflect the learning styles of all ethnic groups, and changing the school to respect and legitimize the cultural diversity of students (Banks, 1986).

With regard to language, schools need to provide instruction in the mother tongue for those children who need it, as well as bilingual education programmes, and English Second Language (ESL) classes. Encouraging white teachers to learn African languages, would further facilitate the process of acculturation (Banks, 1986) whereby diverse cultures in the school are acknowledged and common ideals such as equality and justice are engendered.

Very few of the aforementioned measures to support children who do not speak English, have been introduced into South African schools, and there have been no official policy decisions to develop multi-cultural curricula, although a number of schools have implemented such programmes informally.

In most schools, instruction through the medium of English begins from the first day of schooling, and most ESL children are left largely to their own devices in a submersion-type situation (Romaine, 1989; Baker, 1992). For this reason, many schools have

strict admission criteria with regard to English proficiency (Metcalfe, 1991) and this has put pre-school teachers under pressure to ensure that children are proficient in English by the time they enter the first grade.

Personal interviews with large numbers of pre-school teachers in many regions of South Africa, has revealed that multiracial schools as well as schools that are attended by predominantly black children, experience tremendous pressure from parent communities to teach their children English. Some teachers report that many black parents have changed their home language to English, in a bid to ensure a better educational and economic future for their children.

The pre-school period is regarded by many, as the best time for children to be learning a second language. The underlying assumption is that young children acquire languages more easily than older children and adults. This assumption is examined in the next section.

1.2. The Optimal Age for Second Language Acquisition

A great deal of research has been conducted on the question of whether young children learn a second language more easily and successfully than older children and adults (Harley, 1986).

The findings have been contradictory and ambiguous, because there are many intervening factors that make simple statements about age and language learning untenable (Singleton, 1989).

Generally, most findings indicate that older learners can learn a second language successfully, particularly if they are highly motivated, and that they tend to learn quicker than younger learners in formal classrooms (Genesee, 1988).

On the other hand, younger learners have the benefit of learning a language over a longer period of time, and eventually tend to achieve higher levels of proficiency than learners who begin the acquisition process after childhood. However, the initial rate of learning may be slower in younger learners (Genesee, 1988). This difference in rate of acquisition between older and younger second language (L2) learners is explained by the fact that young children have not completed the acquisition of their first language (L1) and are therefore unable to use their L1 as efficiently as adults, in constructing L2 utterances. Younger children also lack the communicative skills to engage in collaborative discourse (Ellis, 1992), through which they would elicit comprehensible input from their conversational partner, and thus facilitate the process of second language acquisition.

The question that arises, is whether young children can be helped to learn a second language more efficiently, particularly if they need to learn enough of the language to cope with formal instruction.

Many black children, represented by the subjects of this study, will, in effect, need to know as much English as their monolingual peers by the time they enter first grade. It would

seem that they are faced with a formidable task, given that first language learners have taken six years to complete the process. Despite their cognitive maturity and experience in their home language, ESL children could encounter difficulty with English instruction.

Such difficulties may be avoided if the acquisition of English is accelerated, during the pre-school years, through input that is directed at the right level and activates the natural language acquisition mechanisms and processes. Speech-language therapists are trained to provide such input.

1.3 The Role of English in a Future South Africa

Justification for promoting the acquisition of English as a second language, at this point in South Africa's history, can be found in discussions on language planning for a future South Africa. There is by no means agreement that English will become the official language in a future South Africa (Chick, 1992). Ndebele (1987) argues that the acceptance of English by the majority of South Africans depends on it becoming a new language freed from its ideological basis of capitalism. The new language should be free from elitism, accessible to all, and should be standardized to reflect usages by all the different groups in South Africa. The counter argument to the latter requirement, is, that the result would be a degenerate, pidgin form of English, which is internationally unacceptable (Zithembe Seminar, 1992).

There is also concern, that if English becomes the lingua franca, it would discourage the development of the indigenous languages. There is currently a resurgence in the development and formation of indigenous languages in the rest of Africa, and most world countries are in fact multilingual, and encourage pride in tradition and culture. Many believe that South Africa should do the same (Zithembe Seminar, 1992).

On the other hand, there is emerging consensus that in the short term at least, English will continue to be an official language (Prinsloo, 1987). Despite its links with colonialism, English is viewed by many, as a symbol of the struggle against apartheid (Chick, 1992). Chick (1992) believes that, this symbolic value that English has for people, will probably ensure its choice as the official language and medium of instruction in state-aided schools.

Furthermore, the vast majority of African nations have, in post-colonial periods, adopted an "exoglossic" policy (Heine, 1992), by declaring a European language such as English, French or Portuguese as their national official language, with or without an indigenous national language. However, as Heine (1992) points out, exoglossic policy in Africa has failed to overcome poverty and underdevelopment. He postulates that the reason for this is that foreign languages serve as vertical, rather than horizontal media of communication. The characteristics of these two types of media, represented by foreign and indigenous languages respectively, are summarized in Table 1.1.

TABLE 1.1. CHARACTERISTICS OF VERTICAL AND HORIZONTAL MEDIA
(from Heine, 1992)

Vertical Media (foreign languages)	Horizontal Media (indigenous languages)
Taught formally	Learned spontaneously
Enforced by language policy	Used informally
Associated with status	Associated with social equality
Learned to improve socio-economic position	Learned to communicate
Signal authority	Egalitarian
Norm-oriented	Free from normative evaluation
Strong written tradition	Strong oral tradition

Although English in South Africa, has most of the properties of a vertical medium, it may, in time, become a horizontal medium. Heine (1992) points out, that the bilingual language policies of African countries such as Guinea, where indigenous and foreign languages are afforded equal status, can prevent the cleavage between vertical and horizontal media. South Africa would do well to follow the example of countries that have adopted such bilingual policies, and it is a basic premise of this research that the acquisition of English by black children in South Africa, should not be at the expense of their home language and culture. Implicit in the aim of this study is the promotion of bilingualism, and not merely the acquisition of English.

However, the desire of parents to ensure access to English for their children, cannot be ignored. As professionals who are involved with young children, Speech-language therapists have an obligation to use their knowledge and skills to the benefit of

the communities which they serve.

The factors affecting the acquisition of two languages in childhood, within the realities of the South African context, are discussed in Chapter 2.

Chapter 3, focuses on the assessment of language proficiency, and the specific intervention strategies employed by speech-language therapists.

CHAPTER 2

FACTORS AFFECTING SECOND LANGUAGE ACQUISITION WITH REFERENCE TO THE SOUTH AFRICAN CONTEXT

This chapter examines the variables associated with second language acquisition in children, particularly the timing of the acquisition of the two languages and theoretical perspectives on the determinants of second language acquisition.

In contrast to earlier accounts of bilingualism as resulting in a burden on the brain, mental confusion, or even split personality, (Baker, 1992) research over the past two decades has shown fairly consistently that learning a second language in childhood has positive effects on cognitive development. In both bilingual-monolingual comparisons, and in studies using within - bilingual designs, children's bilingualism is positively related to concept formation, classification, creativity, analogical reasoning and visual-spatial skills, to name a few (Diaz, 1983; Hakuta, Ferdman and Diaz, 1987). In addition, bilingual children have demonstrated particularly advanced metalinguistic skills (Ben Zeev, 1977; Ianco-Worrall, 1972). According to Diaz and Klingler (1991, p182) the reliable research findings regarding the positive consequences of bilingualism indicate that "the bilingualism should develop in a situation that allows for systematic uses of the two languages, such as simultaneous acquisition or bilingual education".

The second language should not develop at the expense of, or replace the first language. The latter should continue to be used as a language of "thought and expression" (Lambert, 1990, p210).

According to Vygotsky's (1962, 1978) position on the relationship between thought and language, cognitive functions are regulated and transferred through language. Children must be able to use at least one language to mediate thought. Based on research testing conducted with children who acquired a second language, at the expense of their first language, Cummins (1976) and Skutnabb-Kangas (1981) postulated the "Thresholds Theory". According to this theory, low levels of competence in both languages could result in negative effects on cognition.

The "Developmental Interdependence Hypothesis" (Cummins, 1973), was a refinement of the Thresholds Theory, and claimed that second language proficiency is partly dependant on the level of competence already achieved in the first language.

Pre-school children who are in the process of acquiring their first language, may be particularly susceptible to negative effects if their first language does not continue to develop while they are acquiring a second language.

It is for this reason that the importance of maintaining the first language was stressed to the teachers and parents in this study.

Also, subjects were included in the study only if their first language was well developed, in relation to their chronological age. The aim was to develop bilingualism and not merely English as a second language.

An exact definition of what it means to be bilingual is elusive, and almost impossible (Baker, 1992). In the literature, definitions of bilingualism range all the way from "equal mastery" of two languages, to "at least some knowledge in at least one skill, in a second language" (Fantini, 1985, p14).

Defining bilingualism necessitates further examination of two areas in particular:

- 1) the concept of "proficiency" which may be defined as the degree to which an individual know each of his/her languages.

Levels of proficiency can be established through assessment of linguistic knowledge and skill. How this assessment is carried out depends on how language is defined. This issue is addressed in Chapter 3.

- 2) variables that determine the level of proficiency attained in each language. These variables are discussed in the remainder of this chapter.

2.1. Simultaneous and Sequential Acquisition

The term "Second Language Acquisition" (SLA) is used in the literature to refer to the acquisition of another language once a first language has been learned (Spolsky, 1989). There is some confusion, however, as to the exact age at which the onset of acquisition of a second language is considered to be sequential to or simultaneous with first language acquisition.

This distinction is often referred to in the context of discussions on bilingualism in young children (Kessler, 1984; Genesee, 1988; Baker, 1992). Genesee (1988) regards the acquisition of two languages during the "primary language learning period" from 0 - 5 years, as "simultaneous" or "bilingual acquisition" (p62). He applies the term "second language acquisition" to the acquisition of another language after the age of five.

Most other authors (Kessler, 1984; MacLaughlin, 1987; Spolsky, 1989; Klein, 1986) estimate the cut-off age for simultaneous acquisition to be around three. This age distinction is important, since prior linguistic knowledge, cognitive maturity, and experience in using language are all factors that could affect the acquisition of a language learned sequentially to the first (Genesee, 1988).

The position adopted in this study, was that subjects were sequential second language learners, if their acquisition of English commenced when they started attending nursery school at

age 3 or later.

While the linguistic skills of three to six year olds are different from those of school-aged children (Owens, 1988; Prutting, 1979), they are also not equivalent to the early developing skills of the 0 - 3 year old child. As Kessler (1984) points out, three year olds have developed basic competence in their first language, but continue to refine their semantic, syntactic and pragmatic systems.

Evidence to support the position that three to six year olds need to be regarded as a distinct group of language learners, from 0 - 3 year olds, is provided by studies that demonstrate an awareness of two separate language systems by children in this age group. They are able to switch from one language to the other depending on their interlocutor, the discourse context, and topic of conversation (Fantini, 1985; Volterra and Taeschner, 1978). Younger children generally do not show this ability.

2.2. Theories of Second Language Acquisition

Spolsky (1989) and Ellis (1985) both propose comprehensive models of second language acquisition, that were drawn from in this study. According to Spolsky (1989), the linguistic knowledge and skills a second language learner will acquire, are dependant on four groups of factors, including: first language knowledge, the characteristics and cognitive abilities of the individual learner, various affective factors such as personality, attitudes, motivation and anxiety, and most importantly, exposure to the language, including the quality and

quantity of input, and the nature of the environment in which the language is learned.

All the factors involved in the language learning process interact in complex ways, which explains why there is such wide variation in the rate of second language acquisition, as well as levels of proficiency achieved (Spolsky, 1989; Ellis, 1985). Wong-Fillmore (1991), who has researched second language acquisition in the 5 - 11 year old age group, has found differences of up to five years in the time that different children take to achieve similar competence in a second language.

Each of the factors associated with SLA are examined in more detail below.

2.3. Learner Variables

2.3.(a) Physiological Factors

Language is very largely a function of the brain. The effect of a lack of neurolinguistic integrity (whatever the cause) on SLA, is an important consideration.

Bruck (1978, 1982) compared a group of language disabled children in a bilingual language programme, with a matched group in a monolingual programme. Although both groups were slower than non-language disabled children on linguistic, cognitive and academic skills, they were not different to each other. This suggests firstly, that any limitations that prevent the learning of a first language will also affect the learning of a second

language, and secondly, that learning a second language will not necessarily interfere with cognitive and linguistic functions in language disabled children, provided that opportunities are created for both languages to develop to their full potential. This point is highly controversial, since most language pathologists would recommend the use of one language only, to prevent confusion. The truth is that bilingualism can be regarded as the cause of a language disability, if a second language is taught to replace the first language.

Within the South African context it is often difficult to distinguish between true language disability and delayed language development as a result of a lack of environmental input, due to poverty and deprivation. Many disadvantaged children present with some of the features of linguistic disability, such as limited vocabulary and poor conceptual abilities. Speech-language therapists are sensitive to these characteristics, and are ideally placed to ensure that the child's learning potential is maximised. In accordance with the inter-dependence hypothesis (Cummins, 1978), it is necessary to develop both languages of these children, and it may be necessary to delay the learning of a second language until the first language is well established, thus preventing the occurrence of language disability.

2.3.(b) Language Acquisition Ability

Gardner (1983) proposes the concept of "multiple intelligences" implying that people have different kinds of "relatively autonomous intellectual competencies" (p8). If such a

"linguistic intelligence" - distinct from other cognitive abilities exists, then there will be individuals who have specific language learning aptitude, enabling them to acquire a language easily and well. Differences in language acquisition ability are often observed among first language learners, who have the same environmental input (van Kleeck, 1992).

Some children excel at language learning as evidenced in their ability to remember vocabulary, express themselves fluently in grammatically complex sentences, and pronounce words easily. Some children also demonstrate advanced pragmatic sensitivity and are highly competent communicators. The same may be said of second language learners. Given the same conditions for language learning, two learners could differ markedly in the level of proficiency they attain, as a result of differences in language aptitude.

2.3.(c) Cognitive Style

Cognitive style is a term used to refer to the manner in which information is perceived, conceptualized, organized and recalled (Ellis, 1985). Each person is considered to have a more or less consistent mode of cognitive functioning. The various dimensions of cognitive style that have been identified are usually presented as dichotomies. Where second language acquisition is concerned, the dichotomy that is most frequently presented is that of field dependence and independence (Hawkey, 1982, cited in Ellis, 1985). Field dependence is characterized by a wholistic, socially sensitive approach to learning, while field independence leads to analytic, less socially aware learning. It has been

suggested that field dependence will prove most effective in natural second language acquisition, while field independence may lead to better classroom learning (Ellis, 1985).

Researchers in first language acquisition have found evidence of different acquisitional styles, which seem to correspond with the field dependence/independence dichotomy (Clarke, 1974; Bates, 1976; Nelson, 1974).

Some children are more object-oriented in their language acquisition and talk about things, (field independent) while others are more socially oriented and engage in interactive communication (field dependent). It is quite possible that young children who have acquired their first language using a more socially-oriented style, will be more successful second language learners, because pre-school environments are usually naturalistic and informal. An interesting question is whether language intervention, that also encourages field independence, through object-oriented talk, is not better suited to the needs of those children who use an object-oriented acquisitional style, enabling them also, to acquire the second language efficiently. Admittedly, the assumption is that the same acquisitional style is used for both first and second language acquisition. This question is however, beyond the scope of this research.

2.3.(d) Personality

Guiora (1983) explains that the importance of personality factors in SLA arises from the fact that language is not just a means of communicating, but also a basic method of self representation. Learning a second language involves confronting oneself as a

different person.

It is difficult to say whether children are sensitive to this duality of personality. Informal observation and experience has shown that some children are very aware of linguistic differences and strongly object, or respond with surprise to being addressed in a language that is not congruent with the speaker eg. when a mother addresses her child in a language she does not usually speak, or when a white adult addresses a black child in an African language.

It also seems logical to assume that more confident, assertive and sociable children will engage in social interactions more often. This may result in increased opportunity to practise new language skills, and may lead to more input being elicited from conversational partners.

Beebe (1980) identified another personality characteristic that can affect second language learning, referred to as "risk-taking". If second language learners lack this characteristic they may not try to speak the language, for fear of making errors and appearing foolish. One consistent finding in the research on second language acquisition, is that highly anxious learners are less successful in acquiring a second language (Spolsky, 1989). This communication-specific anxiety is often experienced by persons with communication disorders. The ability to lower anxiety levels in communication is part of the general approach used by all speech-language therapists. Language intervention may be successful in facilitating second language acquisition by

young children, who are anxious in communicative situations.

Within the South African context black children may experience initial "culture shock" when entering nursery schools dominated by white western norms. This may lead to anxiety, which can be alleviated by a sensitive therapist. Speech-language therapists should also educate other professionals working with young children, on how to acknowledge the cultural beliefs and values of the diverse groups of children in their schools, so that the children feel that their languages and cultures are valued. This would prevent unnecessary anxiety, on the part of the children.

2.3.(e) Attitudes and Motivation

In one of the earliest statements on motivation in second language learning, Gardner and Lambert (1959) suggested that an individual's motivation to learn a language is controlled by his attitudes towards the group who speak the language, as well as attitudes related to the practical usefulness of learning the language.

Strong (1984) examined integrative motivation (orientation towards members of the target language) among a group of Spanish-speaking pre-schoolers in an American school. He found that the more advanced second language learners showed a higher level of integrative motivation than the beginners. His findings suggest that where young children are concerned, motivation to become part of a second language group is the result, not the cause of

learning the language.

It would be difficult to tap the attitudes of three - six year olds to the target group, and presumably attitudes would be learned in part, from parents. In the present study, attitudes of the parents were assumed to be positive, at least in relation to the practical usefulness of learning to speak English. Attitudes towards speakers of the target language group were impossible to assess, since parents were not likely to give honest replies to attitude questions, asked by a white researcher, in the present political climate.

At the same time, it is not certain whether children understand the practical usefulness of acquiring a language, and are therefore motivated to learn it. It is possible though, that they will be motivated if they enjoy the experience of communicating in a language.

Speech-language therapists are skilled at "making language fun" and usually the mere fact that their communicative needs are being met, is sufficiently rewarding to encourage children to contribute to interaction (Fey, 1986). The motivation created by language intervention contexts, may be a powerful determinant of the extent to which children involve themselves in the learning process. It is possible that as they become more involved, their proficiency improves, leading to increased motivation to associate with members of the target language group.

This leads to increased exposure to the language which further facilitates acquisition.

Language intervention may thus constitute the initial stage in a process of facilitating acquisition, both directly and indirectly.

This process is illustrated in Figure 2.1

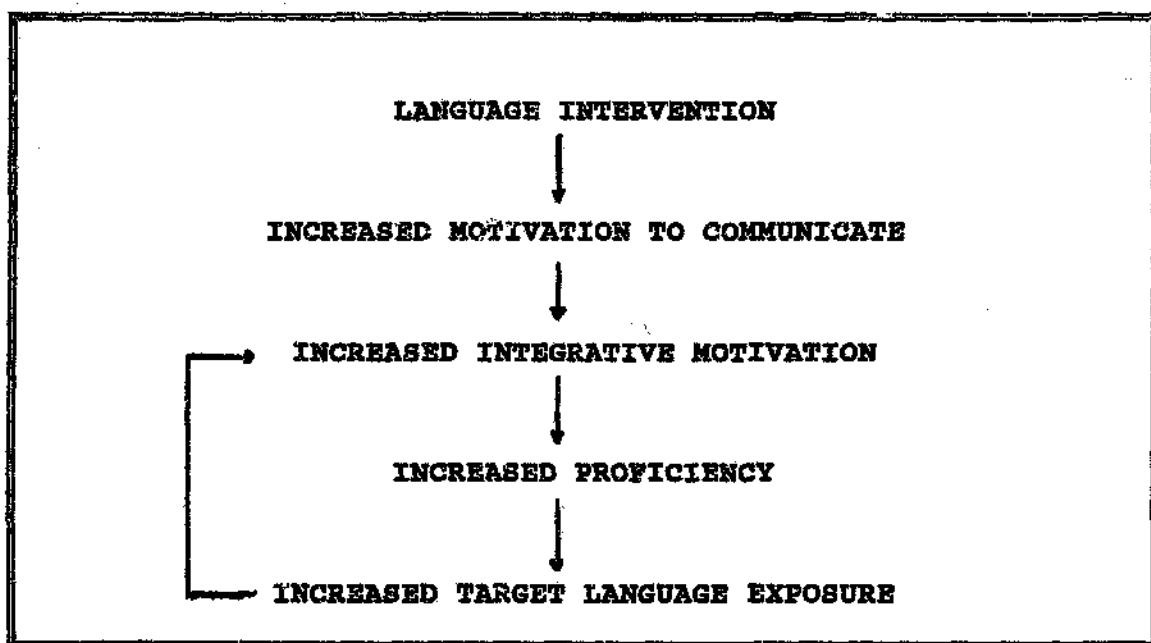


Figure 2.1. The Effect of Language Intervention on Motivation

It may be postulated that language intervention will facilitate acquisition in most pre-schoolers, regardless of individual learner characteristics. Consequently, no attempt was made to measure or control for learner variables, such as aptitude, cognitive style, personality, and attitudes and motivation, in the present study.

2.4. First Language Competence

The role of the learner's first language in the acquisition of a second language has been the topic of continued debate. As previously mentioned, three - six year olds have acquired basic competence in their first language (L1). Of importance, is the extent to which this knowledge influences their acquisition of a second language.

There is disagreement amongst researchers, about the nature and extent of the role of the L1. The reason for this is a result of changing theoretical paradigms for examining SLA. The role of the L1 was initially seen in terms of "transfer theory" (Ellis, 1985, p39) which was closely linked to behaviourism. Within this framework, SLA was viewed as a process of habit formation. Errors in the second language were seen as the result of interference from the entrenched habits of the first language. A procedure known as "Contrastive Analysis" (Lado, 1957 cited in Ellis, 1985) was developed in order to predict the areas of difficulty that learners with specific first languages would experience, so that teaching could be directed at eliminating the chance of error occurrence.

A number of studies conducted by Dulay and Burt (1973, 1974) provided evidence to suggest that contrastive analysis often predicted errors that did not arise, and that many errors that were not predicted, did occur.

Dulay and Burt (1973) found that 87% of the errors made by Spanish-speaking children learning English, were also made by monolingual speakers. They concluded that errors were developmental in nature and not due to transfer. Contrastive analysis was consequently rejected, but later reappraised (Schachter, 1974) and modified to account for the following facts.

- 1) L2 learners sometimes avoid using forms in the L2 that do not exist in the L1 eg. Japanese children were found not to use relative clauses in English because Japanese does not contain English-like relative clauses (Schachter, 1974). Errors therefore do not occur because the structure is not used.
- 2) cross-linguistic interference is more likely to occur where there are similarities, not differences, between the L1 and L2 (Wode, 1976).
- 3) L1 transfer is variable, occurring in certain linguistic and social contexts but not in others (Ellis, 1985; Hakuta, 1986).
- 4) any L2 error may be the result of more than one factor, eg. it may be the result of transfer on one occasion and of developmental processing, on another occasion.

Current thinking on the transfer issue is that, although the learner's L1 is an important determinant in SLA it is not the only determinant and may not be the most important. A precise specification of the role of the L1 cannot be made but it should be viewed as a resource that may be used by the learner in different ways at different stages of the acquisition process (Hakuta, 1986; Ellis, 1985).

Genesee (1988) makes the important point that cross-linguistic influence should be interpreted with due consideration to the language models in the child's environment. If language input to the child contains transfer errors, the child may learn these directly from the model.

Unfortunately, the characteristics of black English in South Africa have not been carefully documented, but there are many features that are the direct result of transference. For example, African languages do not mark pronominal contrasts with separate lexemes, and hence black speakers frequently confuse the gender of personal pronouns in English. The same applies to prepositions. African languages do not contain as many different prepositions as English and hence, difficulty with prepositions is common in the language of black speakers.

The term "code-mixing" is used to refer to the interaction between the child's developing linguistic systems, which manifests in the co-occurrence of elements from both languages in a single utterance (Genesee, 1988). It is not the same as

language transfer, although it is closely related. It has been reported at the phonological (Murrell, 1966; Oksaar, 1971); morphological (Burling, 1978; Lindholm and Padilla, 1978; Redlinger and Park, 1980) syntactic (Redlinger and Park, 1980); and lexical levels (Swain and Wesche, 1975; Leopold, 1978; Vihman, 1985) in the language of most children, acquiring two languages. In fact, the bulk of the research on SLA and bilingual development in young children (0 - 5 years) is taken up with the investigation and explanation of code mixing. Code-mixing is very common in the language use of black South Africans, and children are undoubtedly exposed to it through interaction with their parents.

Studies of code mixing in high level balanced bilinguals, reveal that it is a highly sophisticated, rule-governed communicative device, used to achieve a variety of communicative goals such as conveying emphasis, role playing and establishing socio-cultural identity (Sridhar and Sridhar, 1980). Increased sophistication in using both languages also results in the ability to switch between languages as a function of the setting, tone and purpose of the communication, or the linguistic identity of the interlocutor. This is referred to as "code switching" (Sridhar and Sridhar, 1980).

2.5. Learner Strategies

Strategies used by learners to negotiate the complex task of acquiring a second language include: social strategies, which are the processes for managing interaction in the second language,

and cognitive strategies (Ellis, 1985), which are postulated from examining the learner's language output. The process of acquisition is therefore inferred from the product, and for this reason the existence of acquisitional strategies are regarded as highly theoretical. The following cognitive strategies have been identified in young L2 learners.

a) "chunking" (Ventriglia, 1982) is a very common strategy used by all age groups of second language learners, and consists of "expressions which are learned as unanalysable wholes and employed on particular occasions..." to accomplish communicative goals (Lyons, 1968, p177).

Hakuta (1986) claims that these "prefabricated utterances" (p126) may constitute more than 50% of initial second language usage. Seliger (1982) suggests that unanalysed chunks of language are the product of a strategy of pattern memorization, which possibly occurs in the right hemisphere of the brain.

b) "copy-cattling" (Ventriglia, 1982) is a related strategy, also referred to as "pattern imitation" (Ellis, 1985, p168), and involves deliberate copying of whole utterances or parts of utterances in the speech of an interlocutor. It is very common in young children acquiring a second language (Itoh and Hatch, 1978). Gradually, these memorized, and imitated chunks of language, are analysed into constituent parts, through a strategy that is termed "pattern analysis" (Ellis, 1985, p170). This results in the discovery of the L2 rule system.

Hakuta (1986) cites an example from data she collected from a Japanese child (aged 5) learning English. Initially the unanalysed chunk "I know how" (p127) was used correctly preceding a verb phrase, as in "I know how to make". It began to change into incorrect utterances, such as "I know how do you write..." suggesting that the rule relating to the use of subordinate clauses was being learned.

It is important to distinguish between these early "formulaic utterances" and "creatively constructed utterances" (Ellis, 1985, p167), when assessing children who are acquiring a second language. Caution should be exercised in accepting unanalysed utterances as evidence that the child has reached the level of proficiency reflected in the complexity of the language "chunk".

Once the child starts to construct the language creatively, there are a number of strategies, that may be used eg. overgeneralization or simplification of a grammatical rule or over- and under-extension of lexical meaning (Faerch and Kasper, 1983).

The notion that factors internal to the learner (i.e. biological factors) account for the process of acquisition is allied to nativist theories of language acquisition (Chomsky, 1965). Chomsky (1965, p7) postulates the existence of a specialized "Language Acquisition Device" which contains a "Universal Grammar" comprising a set of principles that are applied by the learner to the grammar of his language.

Once the rules of the language are derived, certain parameters are set in the Universal Grammar. A second language learner has already applied the principles of the Universal Grammar in learning one language. Whether the acquisition of a second language can delineate further parameters in the Universal Grammar, or whether the application of the Universal Grammar to one language, facilitates it's application to a second language, remain open questions.

According to the "Critical Period Hypothesis" (Lenneberg, 1967) language learning cannot proceed after the end of a certain "critical period" since the language acquisition device atrophies with age. However, Harley (1986) points out that phonology is the only language component that supports the critical period hypothesis, as the acquisition of native-like accent in a L2 is particularly difficult beyond childhood.

There is no conclusive evidence to suggest that the Universal Grammar is not available to older second language learners. Pre-school children, who are in the process of L1 acquisition, and are still within the critical period for language acquisition, presumably apply the Universal Grammar in the SLA process.

The question of whether specific language acquisition processes such as the Universal Grammar, operate to the same extent in first and second language acquisition has been taken up by Wong-Fillmore (1991). She believes that two types of cognitive

processes are involved in both first and second language acquisition: those that are specialized for language learning and those involved in more general intellectual functioning.

The crucial difference between first and second language learning is the degree of involvement of these two mechanisms. Language-specific processes are used extensively in L1 acquisition, while general cognitive abilities (e.g. verbal memory, auditory perception, pattern recognition and inductive reasoning) are used more in SLA.

These general cognitive abilities enable the language learner to extract principles and patterns in the L2. However, these general cognitive functions are only developing in the young child, and may not be available for analysis of the L2. It is therefore likely that younger children rely more on the Language Acquisition Device for SLA, rendering the cognitive processes for first and SLA very similar.

The application of specific language acquisition devices, such as the Universal Grammar, result in a fixed sequence of development in the L1, involving a gradual increase in the length of utterances, and a systematic construction of the syntactic rules of the language (Ellis, 1985). If language specific mechanisms are also operative in SLA, the question of a fixed sequence of development in the L2, invariably arises, and following this, the question of whether the sequence of first and second language acquisition is the same (Ellis, 1985).

These theoretical questions gave rise to a field of enquiry in SLA research, referred to as "Interlanguage Studies" (Ellis, 1985; Spolsky, 1989) which is aimed at describing the language learner's emerging competence in the L2. This requires accurate assessment of proficiency, which is one of the topics addressed in Chapter 3.

2.6. The Opportunities for Language Learning

Theories of first language acquisition vary in the extent to which they attribute the language learning process to cognitive factors in the learner, or social factors in the environment. The contribution of cognitive factors has been discussed in the preceding section on learner variables. The social interactionist theory of language acquisition (Bates and MacWhinney, 1982) emphasizes the role of the environment in language acquisition, and claims that the social communicative functions of language are the determinants of language learning. The way in which caregivers talk to children is considered to provide the "scaffold" (Bruner, 1983) for language acquisition, and the child is regarded as an equal partner in the language learning process, cueing the parent to supply appropriate language input as and when required. The linguistic input provided by more competent members of the culture to language learners, has been the focus of a large body of research termed "simplified registers" (Ferguson, 1977).

The research on how mothers talk to their children (Snow and Ferguson, 1977; Waterson and Snow, 1978) referred to as the

"motherese" studies provided the impetus for a number of studies on native speaker speech to second language learners ("foreigner talk"). As a result, the social context for SLA, occupies a pivotal role in virtually all theories and models of SLA (Spolsky, 1989; Ellis, 1985; Lambert, 1974; Gardner, 1985; Schuman, 1978). As Spolsky (1989) states: "Exposure to the target language is a necessary condition for learning" (p.23). While a first language is always acquired through natural interaction with the mother or caregiver, a second language may be acquired in different contexts.

Most SLA theorists distinguish between natural acquisition and formal language learning (Krashen, 1984; Ellis, 1985; Spolsky, 1989; Klein, 1986; Baker, 1992). The terms "spontaneous" and "untutored" are often used to describe natural acquisition, while "guided" "tutored" and "instructed" are used to describe formal language learning that occurs mostly in classrooms. The difference between natural and "instructed" (Ellis, 1985) acquisition may be stated in broad terms. In natural acquisition, the L2 is acquired through exposure to others using it for communication. Instructed acquisition implies that one person (usually the teacher) controls the exposure so that it will lead to learning (Spolsky, 1989). Second language learners may be exposed to either natural or instructed input, or to both.

In addition, instructed input varies along a natural-formal continuum, in terms of the type of activity used to teach the language (Stern, 1991).

2.6.(a) Natural Language Acquisition

The pre-school environment provides mostly natural L2 exposure, through interaction between first and second language speakers, in both child-child and teacher-child conversations. Two aspects of natural language input contribute to SLA. The first concerns the adjustments made by L1 speakers in conversations with L2 learners, referred to as "input-features" (Ellis, 1985). The second, concerns the feedback provided by L2 learners and the manner in which this affects the subsequent input from native speakers i.e. the collaborative discourse between L1 speakers and L2 learners.

The characteristics of simplified registers including "foreigner talk" are not fixed or static, but vary according to the topic of conversation, age of the participants, and the proficiency of the L2 learners (Long, 1981). The most frequently identified input and discourse adjustments in interactions between L1 speakers and L2 learners, are summarized in Table 2.1. These features are characteristic of all simplified registers, and have also been found in the output of L2 speakers (i.e. in the interlanguage) (Ellis, 1985).

TABLE 2.1. SUMMARY OF INPUT AND INTERACTIONAL CHARACTERISTICS IDENTIFIED IN "FOREIGNER TALK" (From Ellis, 1985)

Input Features	Discourse Features
Slowed Speech Careful Pronunciation Exaggerated Intonation Stressed Key Words Restricted Vocabulary Increased use of High Frequency Words Fewer Pronouns Gesture Explanatory Phrases Fewer Contractions Shorter Sentences Less Subordination-More Co-ordination Fewer WH Questions More TAG Questions More Present Tense Verb Forms	More here and now talk Clear Topic Initiation More Comprehension Checks More Clarification Requests More Repetitions of Utterances (L1 + L2) More Expansions Shorter Responses

Hatch (1983) observed various discourse patterns in adult (L1)-child (L2) interactions. Most of these resemble those observed in mother-child interactions in first language acquisition (Clark and Clark, 1977; Wells, Montgomery and McLure, 1979) and include:

- 1) attention getters to elicit information from the adult eg:
 child: "look"
 adult: "yes, ball" (provides object name)
 child: "ball"
- 2) imitations of adult's previous utterance to maintain the discourse.
- 3) incorporating chunks of previous discourse into an utterance.
 eg. adult: "What is this?"
 child: "What is this, is car"

Scarcella and Higa (1981) found that adult native speakers adjusted their input more frequently to children learning a L2 than to adult L2 learners.

One can assume, therefore, that pre-school teachers provide learner-directed talk to children acquiring a second language. Whether L1 children also adjust their language to L2 peers, would be an interesting research question. Several studies have demonstrated that children as young as two, are able to adapt their language to listener characteristics such as age, deafness and blindness, (Shipp and Ventry, 1976; Shatz and Gelman, 1973; Maratsos, 1973; cited in van Kleeck, 1984). If one extrapolates from this research, it is quite possible that children also use various input and interaction features in their conversations with L2 learners.

Pre-school children are therefore exposed to a great deal of natural language, containing many features of learner-directed talk.

Ellis (1985) correctly points out that the key issue is whether the input and interaction characteristics of the language directed at L2 learners, facilitates their acquisition of the language.

Krashen (1981) argues that since studies on the effects of motherese have shown that acquisition is facilitated by such input, and the features of motherese and "foreigner talk" are

similar, the latter should facilitate SLA. The input and interaction provided by the pre-school environment should therefore facilitate SLA.

2.6.(b) Instructed Second Language Acquisition

Both the fields of second language teaching and language intervention in speech-language pathology, have been influenced by the main theories of language acquisition, resulting in a similar course of development of teaching approaches and methods.

Behaviourist accounts of language learning as the linking of a stimulus to a response, led to the use of modelling and imitation of language drills to teach target forms. The problem with this approach (termed the "audio-lingual method" in SLA), (Baker, 1992), was that generalization of learned forms to spontaneous conversation outside the clinic or classroom, seldom occurred.

Chomsky's (1965) notion of an innate language acquisition device gave rise to structural approaches to language teaching focusing on syntax, without much regard for the meaning or appropriate contextual use of language.

In the 1970's, functional approaches to language teaching evolved out of the "pragmatics revolution" (Bernstein and Tiegerman, 1988). Language was no longer viewed only as a system of rules, but also as a means of communication.

Such communicative approaches to second language learning emphasized the following aspects:

- 1) active learner participation
- 2) meaning-focused interaction
- 3) the expression of a variety of language functions in socially appropriate ways.

Such approaches de-emphasize the correct use of language forms (Eaker, 1992).

Recently, the accent has been on the interactional approach (Baker, 1992) using real interpersonal communication as the method, with the teacher taking a facilitatory as opposed to a directing role.

Current approaches to language intervention are closely aligned to the functional and interactional approaches, but are also more integrative, incorporating the meaning, form and use of language in real interpersonal communication. The exact nature of the intervention provided by speech-language therapists is discussed further in Chapter 3.

Chapter 2 has examined the variables affecting second language acquisition including the effect of various learner characteristics and the impact of environmental input on the acquisition process.

CHAPTER 3

ASSESSMENT AND INTERVENTION - THE SPEECH-LANGUAGE THERAPIST'S PERSPECTIVE

This chapter focuses on the measurement of language proficiency, and intervention to facilitate second language acquisition, in relation to the role of the speech-language therapist. Proficiency testing "becomes fused with ... the general area of language testing" (Baker, 1992), which is a complex task, because language is not easily quantified and it is not a unitary phenomenon that can be measured linearly (Bernstein and Tiegerman, 1988). Language is a multidimensional, complex and dynamic system. How it is measured depends on how it is defined, and how the nature of language proficiency is operationalized for closer scrutiny (Harley, Cummins, Swain and Allan, 1990).

3.1. Definition of Language

Historically, language assessment (and teaching) has reflected various theoretical perspectives on the nature of language. The assessment of both first and second language has been influenced by the same theories. Briefly, definitions of language have evolved over time from behaviourist accounts of language as a non-specific entity, no different to any other behaviour, to Chomsky's notions of language as an innate grammar, to cognitive-interactionist perspectives on language as a meaning system, to social-interactionist theory focusing on the communicative

functions of language (Schannon and Leubecker, 1989).

Bloom and Lahey (1978) developed a definition of language incorporating aspects of each of the above theories. To acquire language, they believe, a child must learn a "systematic conventional code" (p4) and be able to use it for communication. More specifically, the child must learn the meaning of language, (word and sentence meaning as well as non-literal meaning), how the meaning is encoded in forms (phonologically, morphologically, syntactically) and how forms and meanings are expressed in different social contexts to achieve communicative goals. Thus, language has three dimensions: content, form and use. These dimensions of knowledge are integrated and manifest as communicative competence.

Accounts of communicative competence in second language acquisition, have focused rather narrowly on only one dimension, namely form or content (Spolsky, 1989). This has resulted in the assessment of only lexis or grammar in tests of second language proficiency. In addition many theories of second language acquisition were built on these limited conceptualizations of language. For example, Krashen's Monitor Model (1982) refers only to the acquisition of syntax (Spolsky, 1989).

Unfortunately, this also led to a narrow view on the content of language teaching, and the emphasis on the acquisition of grammar, without regard for the content or use of language.

More recently, Canale and Swain (1980) have proposed a model of the dimensions of communicative competence in a second language. They recognize four competencies, including:

- 1) "Grammatical competence" which refers to knowledge of lexical items and rules of morphology, syntax, sentence-grammar semantics, and phonology.
- 2) "Sociolinguistic competence" which refers to the rules for use of the language.
- 3) "Discourse competence" which refers to knowledge of cohesion and coherence in sustained conversation; and
- 4) "Strategic competence" which refers to the verbal and non-verbal communication strategies that may be used to compensate for communicative breakdowns (Canale and Swain, 1980, p29-30).

A second very similar model of second language competence was proposed by Bachman (1990) and comprises:

- 1) organizational competence, which involves a knowledge of grammar, vocabulary and phonology; and "textual competence" which is a "knowledge of the conventions for joining utterances together to form a text" (Bachman, 1990, p88).

- 2) pragmatic competence, which refers to illocutionary competence (language functions and conversational devices) and sociolinguistic competence (sensitivity to register and dialect).

Both these models are incorporated in the dimensions of Bloom and Lahey's (1978) model. The "Use" dimension in the latter refers to sociolinguistic or pragmatic competence. Although Bloom and Lahey (1978) do not refer explicitly to discourse competence, both language content and form are part of discourse competence, which is not strictly speaking a separate linguistic dimension, but a level of language that extends beyond the sentence level (Lund and Duchan, 1988).

In the present study, the focus of assessment was on the content and form dimensions of language, specifically word meaning (vocabulary) and syntax and morphology. In addition, both comprehension and production skills were assessed, since Spolsky (1989) points out that in SLA, as in L1 acquisition, receptive abilities typically develop before production abilities.

Phonology was not assessed because it does not pose a problem for young L2 learners. They seem to acquire the phonological system of a language with ease (Harley, 1986). Sociolinguistic competence was not focused on because pre-school children are still in the process of acquiring many of the skills involved in sociolinguistic competence in their L1, and their continued interaction with L1 speakers of English would enable them to

acquire these skills naturally. In addition, vocabulary and syntax are the building blocks to the other competencies, and need to be acquired first. Older second language learners, should however, be exposed to acquisition environments, that enable them to acquire sociolinguistic competence in the second language. This also applies to younger second language learners who do not have the benefit of contact with native speakers in the pre-school environment, such as the black children in the D.E.T schools.

3.2. The Interlanguage

"Interlanguage" is defined as the language that is constructed by the L2 learner at any given point along the continuum of moving from L1 competence only to competence in both the L1 and L2 (Nemser, 1971 cited in Ellis, 1985). Selinker (1972) noted that most L2 learners fail to reach the end of the interlanguage continuum. Their acquisition of the L2 ceases at some point, and many transfer errors become "fossilized" (Selinker, 1972, p11).

Although fossilization does not occur in young children (Genesee, 1988) many errors made by this group of learners are particularly resistant to change. It is possible that language intervention can keep the process of SLA dynamic, so that errors do not become entrenched.

An understanding of the sequence of SLA, that manifests in the interlanguage, is important if an accurate assessment of proficiency is to be achieved. Ellis (1985) cites evidence from

both cross-sectional and longitudinal studies of SLA of English by speakers of a number of different L1's, for a natural sequence of SLA. He delineates the following stages:

Stage 1. Unanalysed Formulaic Speech

Stage 2. Basic Syntax, characterized by avoidance of variation in word order (eg. inversion of subject and verb in the question form).

Stage 3. Variant word order develops.

Stage 4. Development of morphology.

Stage 5. Complex Sentence Structure.

Ellis (1985) cautions against over-reliance on the natural sequence of SLA. There may be differences in sequence, that can be attributed to the L1 and the learner's acquisitional style. Ellis (1985) also distinguishes between sequence and order of acquisition.

The latter refers to acquisition of specific, detailed or microscopic features of the language, such as particular morphological structures, and question and negative forms. Evidence from comparisons of L1 and L2 order of acquisition studies is mixed (Cazden, 1972; Felix, 1978; Ervin-Tripp, 1974) and suggests that L1 transfer and cognitive maturity may determine order of acquisition. It would not therefore be justifiable to adhere to order of acquisition as an index of proficiency. However, sequence of acquisition measures, such as, sentence complexity, would provide valid information on the

extent to which a L2 learner has progressed along the interlanguage continuum.

3.3. Methods of Assessment of L2 Proficiency

Adler (1991) feels that the discipline of speech-language pathology can contribute meaningfully to the area of L2 proficiency measurement in children, by providing appropriate assessment tools. The method of assessment in speech-language pathology practice, depends on the purpose of the assessment (Bernstein and Tiegerman, 1988).

There are two general purposes:

- 1) to establish whether a language disability exists.
- 2) to characterize the exact nature of the deficit, by establishing the level of linguistic functioning, with respect to the content, form and use of the language.

Procedures used to perform the second function are applicable to L2 proficiency measurement.

There is general agreement in the area of language assessment (Oller, 1979; Lund and Duchan, 1988; van Kleeck and Richardson, 1990) that it is not appropriate to assess language using a simple "discrete point approach" (Oller, 1979). Discrete point measures typically examine each dimension of language separately in situations that do not reflect natural communication. The basic premise of discrete point theory is that language can be

taken apart and put back together again. The criticism against this assumption is that language is not merely the sum of its parts (van Kleeck and Richardson, 1990).

The emphasis in language assessment since the emergence of the pragmatic approach (Lund and Duchan, 1988) in the 1970's, has been on the analysis of spontaneous language samples obtained in natural communication contexts (Lund and Duchan, 1988; Miller 1981; Crystal, Fletcher, and Garman, 1989). Both discrete point tests, and analysis of spontaneous language samples were employed as proficiency measures in this study.

3.4 Language Intervention

Current approaches to language intervention are based on an eclectic view of the nature of language and how it is acquired. Language therapists recognize that the form of language cannot be divorced from the meaning it represents or from the context in which it is appropriately used (Fey, 1986). The "naturalness" of the situation is emphasized and many innovative methods have been developed to facilitate the acquisition of forms and meanings in purposeful interpersonal communication (Lewis and Penn, 1989; Fey, 1986; Miller, 1981; Lund and Duchan, 1988; Constable and van Kleeck, 1984; Blank and Marquis, 1987).

Language intervention is a process of facilitating the child's "perceptions of consistencies across language content, form and use by manipulating the linguistic and non-linguistic context" (Fey, 1986, p21). This manipulation involves the formulation of

specific intervention goals. It is along this dimension that language intervention differs most from natural acquisition.

The content/form goals of intervention are selected according to the linguistic needs of the child, which are established through prior assessment. The therapist's input is carefully adjusted to include the target forms, and provided in meaningful contexts. The therapist is also responsive to the child's communication.

3.4.(a) The Intervention Context

The intervention context is structured to replicate, as far as possible the natural communication process. Fey (1986) discusses the principles that are used to enhance the naturalness of language intervention contexts, including:

3.4.(a)(i) The Informativeness Principle

This principle was derived from the observation that children are likely to talk about the aspect of an event that is most novel, dynamic, salient or uncertain i.e. the most informative. There are a variety of ways in which interventionists manipulate the context to increase the informativeness of their input. Snyder (1978) suggests a useful strategy for teaching vocabulary, for example. The essential feature of the activity is an initial redundant pattern (eg. a series of black and white line drawings) followed by some change (eg. a coloured picture) to elicit the word "pretty".

Greenfield and Smith (1976) as well as Bates (1976) claimed that

young children's tendency to name informative aspects of their environment is a precursor to their developing pre-suppositional abilities, which enables them to participate in cohesive discourse.

Situations can be set up in which critical portions of the child's response are not contained in the therapist's prior utterance, and are therefore highly informative. Lewis and Penn (1989) have provided some excellent examples of how this strategy may be used to facilitate the acquisition of various syntactic structures. Crystal et al (1989) suggest the use of "false assertions" to uphold the principle of informativeness.

3.4.(a)(ii) Creating real Motivation to communicate using target forms

Fey (1986) suggests that content-form interactions are most likely to be learned and used appropriately if the context provides a real need to use the target form for communication.

The barrier game and/or hiding objects are widely accepted intervention strategies to create communicative motivation. Constable and van Kleeck (1984) suggest the "violation" of the child's world knowledge to create communicative motivation eg. pouring ingredients onto the table instead of a bowl, in a baking activity.

3.4.(a)(iii) Encouraging use of target forms as both responses and spontaneous utterances.

Over-use of questions in intervention may result in the child

using a form only to respond to questions and not to initiate spontaneous acts of communication (Blank and Milewski, 1981). Role play activities, or puppet shows, where children are encouraged to ask their own questions for example, are among the techniques that can be employed to ensure spontaneously generated language.

3.4.(a)(iv) Providing varied contexts in which the language form is used

Hedge (1980) points out that teaching language forms in a limited number of linguistic contexts can lead to rote learning, and the use of these forms may also be restricted to the contexts in which they were learned.

To avoid this, it is important to make use of a variety of social and linguistic contexts to teach a particular form. Children need to learn to use language forms to serve a variety of communicative functions (Ellis, 1985).

3.4.(a)(v) Organising stimuli cohesively.

Lee et al (1975) introduced this notion in their Interactive Language Development Teaching procedure, showing the significance of topic maintenance by following a theme throughout an intervention session, or part thereof.

3.4.(a)(vi) Encouraging communication about things outside the immediate context.

While it is important in the initial stages of language learning

to restrict the language in intervention to the here and now (i.e. context-embedded talk) it is also important to encourage language learners to develop the linguistic skills necessary for communicating about past and future events, as well as constructing fictional events (stories) (Constable and van Kleeck, 1984). This is the initial stage of bridging the gap from social (context embedded) to instructional (context reduced) uses of language, which is important for L2 learners who are to be instructed in the L2, from the start of their school careers.

3.4.(a) (vii) Facilitating Metalinguistic Development

Another way of encouraging the development of the ability to cope with instructional uses of language, is to facilitate language awareness or metalinguistic development (Constable and van Kleeck, 1984).

Constable and van Kleeck (1984) provide various suggestions on how this can be done with pre-school children including: correcting the therapist's own deliberate mispronunciations, engaging in nonsense sound play, commenting on words that are hard to say, making up new names for objects that children already know, introducing homonyms, (eg. flour/flower), focusing attention on long/short words, modelling and encouraging rhyming and alliteration, and segmentation of compound words.

The object of these activities is to facilitate the child's understanding that language is an arbitrary code, made up of parts (sounds, syllables, words) and that words are separate from their referents (van Kleeck, 1984).

Apart from these techniques, used to develop language awareness, the following techniques are typically used in language intervention to model linguistic forms and encourage interaction with the language learner.

3.4.(b) Intervention Techniques

Intervention techniques refer to the specific features of the input provided by speech-language therapists. The following techniques are used to encourage the child to use new language forms, and to facilitate comprehension. Since many language intervention techniques are derived from the research on simplified registers, which apply to both first and second language acquisition, there is often overlap between speech-language therapy techniques and L2 teaching techniques.

3.4.(b)(i) "Focused Stimulation" (Fey, 1986, p209)

This technique is used extensively in language intervention and involves the therapist's repeated use of a target structure in a meaningful way.

The constant use of a particular form is intended to focus the language learners' attention on it. According to Fey (1986) this technique concentrates more on comprehension, by ensuring the child's processing of meaningful stimuli.

Theories of SLA emphasize the comprehensibility of the input the learner receives (eg. Krashen, 1985), so that input can be turned into "intake" (Corder, 1978), i.e. processed and stored.

Theorists who argue strongly for the importance of reception in second language learning, stress that a greater quantity of comprehensible input results in rapid acquisition of a language (Long, 1983). Long (1983) believes that a context-embedded orientation as well as the interactional features of native speaker language such as comprehension checks, provide the main source of comprehensible input for the L2 learner.

Krashen (1985) claims that the typical silent period experienced by young L2 learners in particular, before they begin to produce the L2 serves as a means of building up competence through listening. This is why, Krashen (1985) explains, instruction often helps in the initial stages of language learning. The learner is unable to obtain equally comprehensible input in natural contexts.

Focused stimulation is thus an important intervention technique, to facilitate comprehension of the L2, particularly, for children in the early stages of acquisition.

There are also theories of instructed SLA that stress the additional and equal importance of the learner's output in the acquisition process (e.g. Swain, 1985). The output hypothesis (Swain, 1985) emphasizes the advantage of the learner being "pushed" to produce L2 utterances.

Studies on collaborative discourse (Ellis, 1990) have found that when L1 speakers "scaffold" (p123) for the L2 learner by using vertical constructions for example (see (ii) below), new

structures are often acquired. Speech-language pathologists adopt an integrative approach to the input-output (reception-expression) issue. Language intervention aims at facilitating production as well as comprehension.

3.4.(b)(ii) Vertical Structuring

This technique is similar to focused stimulation, but requires that the child respond more regularly.

The therapist may ask a question requiring the child to expand on a previous utterance.

e.g. child: "ball"

therapist: "yes, where is it?"

child: "table"

therapist: "right, the ball is under the table"

According to Long and Sato (1984) such vertical structures enable L2 learners to build on their own utterances by using parts of the L1 speaker's previous utterance.

3.4.(b)(iii) Expansions

Expansions are therapist responses that repeat the child's prior utterance while adding relevant grammatical and sometimes semantic detail to transform the child's attempt into a complete, well-formed utterance.

Folger and Chapman (1978) as well as Scherer and Olswang (1984) showed that children are more likely to produce spontaneous imitations following adult utterances that are expansions of

their own productions than following any other type of adult conversational act.

3.4.(b)(iv) Expatiations

Expatiations are responses to the child's utterance that extend the child's meaning by contributing new, relevant information. Both expansions and expatiations are features of adult input that are strongly correlated with indices of language development in children (Cross, 1978).

3.4.(b)(v) Forced Alternatives

This technique was introduced by Crystal et al (1989) to elicit a specific form from the child. The basic form of the adult stimulus is: "Is it X or Y" (Crystal et al, 1989, p120).

Thus if the target utterance is a Subject Verb construction, the adult would say: "Is the man sleeping or is the boy jumping", so that the child responds: "The boy is jumping". (Lewis and Penn, 1989, p44).

3.4.(b)(vi) Sentence Completion

This technique is often used in second language learning contexts (Crystal et al, 1989) and requires the child to complete a sentence begun by the therapist, and left incomplete using expectant, rising intonation. eg. This is a blue.....(car)

Although the above list of techniques is not exhaustive, they represent those most commonly used in language intervention

(Lewis and Penn, 1989; Fey, 1986). They are also frequently reported as input features in native speaker speech to L2 learners (Ellis, 1985).

3.5. Evaluating the Effects of Intervention

Ellis (1985) makes the point that in order to demonstrate the efficacy of intervention, it is necessary to "establish a causal relationship between the L2 data made available to the learner, and his output" (p152).

There is generally a dearth of carefully controlled empirical investigations on the efficacy of intervention in second language acquisition. According to Ellis (1992), models and theories of second language acquisition were only seriously subjected to empirical research in the 1980's, and the focus has been largely on the acquisition of grammar. There have been a few descriptive studies on the acquisition of socio-linguistic competence, and some observational studies on L2 classroom processes.

This chapter has examined the assessment of proficiency in the second language, as well as the intervention provided by speech-language therapists.

Despite the fact that pre-school is for many children a first encounter with a second language, the research on second language acquisition has ignored the effects of instructional input at this level (Weber and Tardif, 1991).

The present study represents an attempt to contribute to the weak research base on SLA in the pre-school period, through empirical investigation of the effects of intervention on L2 acquisition.

CHAPTER 4

METHODOLOGY

A. AIM

The main aim of this study was to determine whether language intervention provided by a speech-language therapist significantly improved the English proficiency of a group of black pre-school children.

In order to fulfil this aim, the following sub-aims were formulated:

1. To conduct pilot studies to:

1.1. establish the criterion-related validity of the Test of Auditory Comprehension of Language-Revised (T.A.C.L.-R) (Carrow, 1988), when it is applied to pre-school children acquiring English as a second language.

1.2. establish the reliability and validity of a newly constructed vocabulary measure for pre-school second language learners.

2. To establish whether the subjects' exposure to English at home and at school had a significant effect on their

vocabulary and syntactic proficiency before intervention.

3. To determine whether the comprehension and expression of English vocabulary and syntax improved significantly more as a result of intervention, than as a result of an increased quantity of input in English, and/or regular attendance at an English nursery school.

B. SUBJECTS

1. Subject Selection Criteria

To ensure that subjects were functioning normally in their first language the following criteria were formulated:

- 1.1. The case histories of subjects were to contain no factors that are associated with language disability. Subjects were excluded from the study if their parents reported that their speech-language development was delayed, and that any combination of the following factors were or had been operative: premature birth, abnormal delivery, anoxia at birth, congenital abnormalities, severe jaundice at birth, sucking difficulties, late walking, left-handedness, recurrent history of ear problems, below average intelligence, and behaviour problems. These factors were identified by Penn and Segal (1982) to occur frequently in relation to subtle language impairment, when they analyzed computerized case history data from 555 language impaired children seen at the University of the Witwatersrand, Speech

and Hearing Clinic.

Although no single factor could account for the language difficulty, a combination of the above factors was often reported.

- 1.2. Subjects were to be functioning age-appropriately in the areas of development related to language acquisition. (i.e. socially, cognitively and physically) (van Kleeck and Richardson, 1989). This information was obtained from teacher interviews and a screening of non-verbal intelligence.
- 1.3. Subjects were to have normal hearing so as to exclude the well documented effects of a hearing loss on language acquisition (Bernstein and Tiegerman, 1988).
- 1.4. Subjects were to be functioning normally in their first language, as reported by their parents on the language use questionnaire. (Appendix 2). In the absence of language assessment tools in the home languages of the subjects it was necessary to rely on the information provided by parents.
- 1.5. To exclude the indirect effects of poverty (e.g. malnutrition, poor medical care, etc) on language development (Edwards, 1979) subjects were to be from backgrounds, where these factors were unlikely to be

present.

To ensure that all subjects would fulfil this criteria, subjects were selected from a pre-school known to cater for the children of mostly professional parents who are able to afford the relatively high fees at the school.

In addition, the following criteria were specified:

1.6. For reasons discussed in the introduction, subjects were to be acquiring English sequentially, as a second language.

1.7. All subjects were to be attending the same nursery school to ensure that school variables that could affect language acquisition, were as far as possible, kept constant for all subjects. These variables include: the amount and type of language input provided by staff members, and the ratio of English speaking to non-English speaking children (Wong-Fillmore, 1982). This criterion obviously restricted the number of subjects that could participate in the study.

1.8. Subjects were to be in the age range 3,0 - 6,6 years. The lower age limit was set to include children who were in the initial stage of second language acquisition, so that their response to intervention could also be assessed.

The upper age limit was defined by the fact that children older than 6,6 would no longer be in the pre-school, and the

purpose of this study was to facilitate the acquisition of English by pre-school children, so that they would cope with formal instruction.

2. Subject Description

Thirty subjects, who fulfilled the above criteria were selected from a nursery school in Parktown, Johannesburg.

2.1. Age

The age range of subjects was 3,1 to 6,6 years. Six children were between 3,0 and 3,11 years old, fourteen children were between 4,0 and 4,11 years old, and ten children were between 5,0 and 6,6 years old.

2.2. Gender

There were seventeen girls and thirteen boys in the sample. There is no research evidence to suggest gender differences in second language acquisition.

2.3. Home Background

The majority of subjects had professional parents, with the lowest educational level amongst parents being standard 8. Three of the subjects were the children of domestic workers and lived with their parents in the homes of English-speaking families.

2.4. Language Background

All subjects were exposed to at least one indigenous African language at home. Nine subjects were exposed to more than one such language, and two subjects were exposed to three languages. All parents reported however, that their child was dominant in one language, usually the mother's language, and did not speak the other languages.

2.5. Exposure to English at Home

Based on the parents' responses to the language use questionnaire, it was possible to group the subjects into two home exposure groups. Group 1 comprised those subjects whose exposure to English at home was limited to television viewing, listening to the radio, attendance at church services and visiting with friends.

Group 2 comprised those children whose parents interacted with them in English on a daily basis, in addition to the exposure they received from the other sources described above. Since the primary means to acquisition of a language, including a second language, is meaningful interaction (Fantini, 1985) it was hypothesized that children whose parents spoke to them in English, would be more proficient, and may therefore respond differently to intervention, than children who did not communicate in English at home. There were fifteen subjects in each home exposure group, and the pre-intervention scores attained by each group were compared to determine whether home exposure to English had a significant effect on proficiency. The

result of this comparison determined how subjects were allocated to the intervention and control groups.

2.6. Length of Attendance at an English Pre-School

The period of time that the child had spent at an English pre-school (not necessarily the current school) was considered an important determinant of proficiency and therefore possibly affecting the response to intervention.

On the basis of their school record, subjects could be divided into three school exposure groups. Group 1 comprised those subjects who had attended an English pre-school for a year or less. Group 2 were those subjects whose attendance had been between one and two years, and Group 3 were those subjects who had attended an English school for more than two years. There were twelve, fifteen, and three children in school exposure groups 1, 2 and 3 respectively. These groups were compared to each other on the pre-intervention scores to establish whether the length of attendance at an English pre-school had a significant effect on proficiency. The results of this comparison in turn, affected the allocation of subjects to the intervention and control groups.

Subject characteristics are summarized in Table 4.1.

TABLE 4.1 SUBJECT CHARACTERISTICS

Subject Number	Age	Gender	Parents and/or	Occupation Education Level	Home Language	Home Exposure Group	School Exposure Group
			Mother	Father			
1	3.1	F	B.A. Nursing	Self-employed Matric	Zulu	1	1
2	3.8		Nurse Matric	Service Manager Matric	Venda Tsongo Zulu Sotho	1	1
3	4.4	M	Psychology Intern	Personnel Officer	Sotho	1	2
4	5.4	M	Quantity Surveyor	Teacher	N. Sotho	2	1
5	4.5	M	Clinical Psychologist	Marketing Manager	Xhosa Zulu	2	2
6	5.10	M	Secretary Std 9	Std 8	Tswana	2	3
7	5.1	F	Secretary	Marketing Director	Sotho	1	2
8	4.8	F	Nurse Matric	Diploma Sales Manager	Zulu Xhosa	2	2
9	4.11	M	Assistant at JCE	Supervisor	Zulu Xhosa	1	2
10	5.3	M	4th year Medical Student	Diplomat	Xhosa	2	1
11	3.9	F	Secretary	Self-employed	Tswana Zulu	1	1
12	3.11	F	Nurse	Medical Student	Venda	1	1
13	3.6	F	Bank Clerk Matric	Deceased	Zulu	1	1
14	4.8	F	Export Clerk Matric	Shop Manager Std 8	Tswana	1	2
15	4.1	F	Lecturer	Lawyer	Sotho	2	2

TABLE 4.1 SUBJECT CHARACTERISTICS (CONTINUED)

16	4.8	F	Telex Operator	Soccer Player	Tswana	2	2
17	5.0	F	Domestic Worker	Unknown	Zulu	2	1
18	5.6	M	Clerk Std 8	Clerk Matric	Venda Tswana	2	2
19	6.6	M	Housewife Matric	Deceased	Zulu Sotho	1	3
20	5.5	F	Domestic Worker	Painter	Zulu	2	2
21	4.3	F	Clinical Tutor	Teacher	Zulu	1	1
22	4.6	F	Stock Controller	T.V. Producer	Zulu	1	1
23	4.5	M	Medical Scientist	Community Worker	N.Sotho Zulu	1	2
24	4.10	F	Pharmacist	Pharmacist	Tswana N.Sotho	1	2
25	4.5	M	Nurse (Post-Matric Diploma)	Self-employed Std 8	Zulu Sotho	2	2
26	3.1	M	Clerk	Warehouse Manager	Sotho	2	1
27	4.10	M	Social Worker	Nuclear Physicist	Zulu Xhosa	1	1
28	4.11	F	Lives with is a worker	granny who domestic	Sotho	2	2
29	5.9	F	B.Comm Student	Doctor	S.Sotho	2	2
30	5.5	M	Lecturer	Bank Clerk	Tswana S.Sotho Zulu	2	3

C. PROCEDURE

This study was conducted over four consecutive phases. The first phase involved the piloting of the assessment materials that were specifically modified or developed to assess the subjects' proficiency in English.

The next three phases comprised the true design of this study, which was a pre-test, post-test, control group experimental design (Leedy, 1985).

The second phase involved the screening of all black children at the nursery school, who were acquiring English as a second language. During this phase, all children who complied with the subject selection criteria were further assessed to establish their English proficiency. The intervention was conducted in the third phase.

The ten subjects in the intervention group received language intervention from a qualified speech-language therapist. The ten subjects in the first control group were exposed to additional input in English through interaction with a student teacher, and the ten subjects in the second control Group attended the regular pre-school programme only. During the fourth and final phase the subjects were re-assessed using the same assessment battery applied in phase two, to determine the effects of the intervention and control group treatments on their English proficiency.

Figure 4.1. illustrates the different phases of the procedure, the aims of each phase, and the various measures used or conducted during each phase.

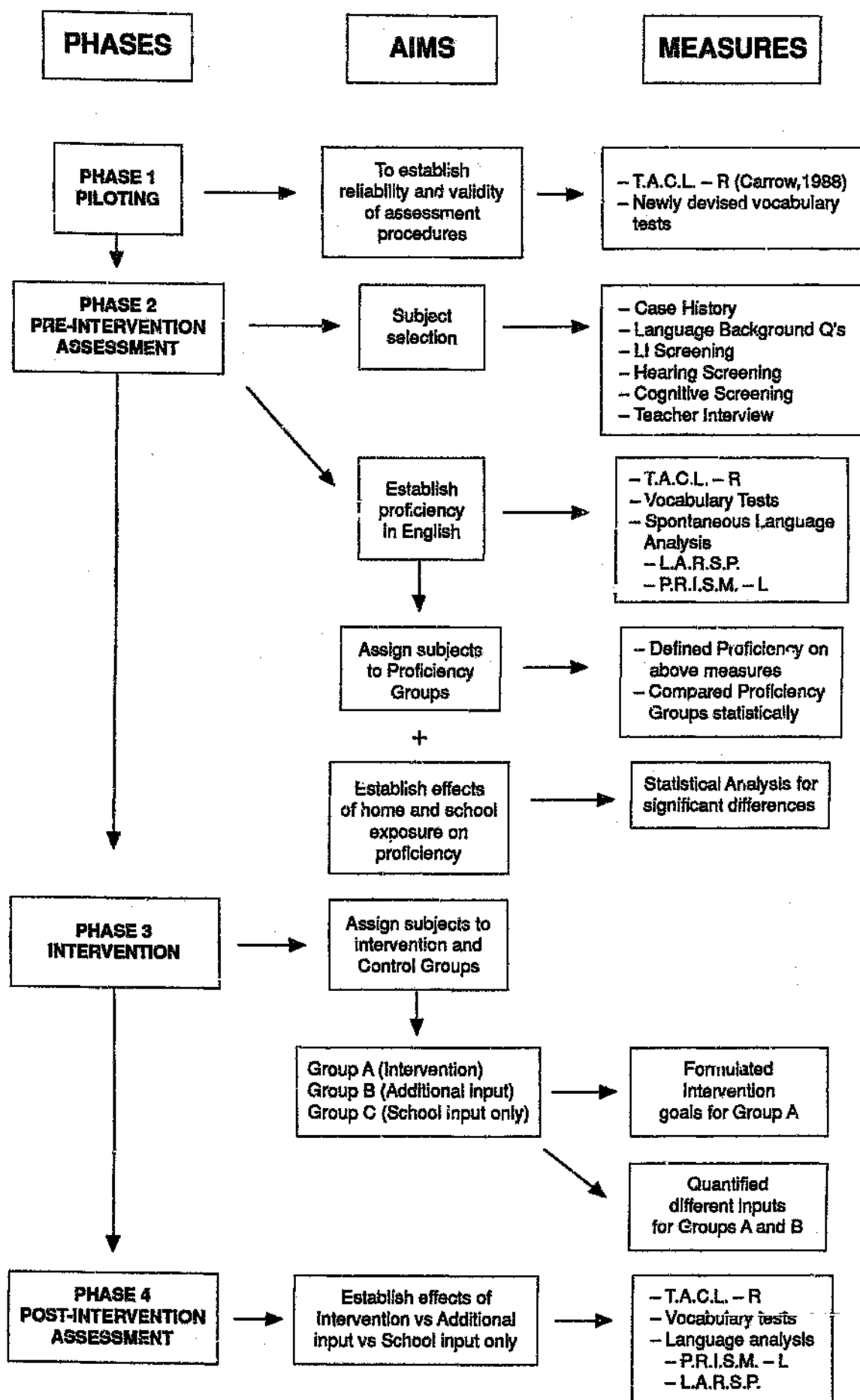


Figure 4.1 Diagrammatic Representation of the Aims and Measures of each Phase of the Procedure

1. PHASE 1 PILOTING ASSESSMENT MATERIALS

During this phase, the applicability of the T.A.C.L.-R (Carrow, 1988) to pre-school children acquiring English as a second language was determined. In addition, the criterion-related validity and test-retest reliability of the newly constructed vocabulary measures were established. Each of these measures is discussed separately.

The subjects used in the pilot studies were selected from a pre-school in the same area as the school where the main study was conducted. They were selected according to the same criteria, and using the same procedures as the subjects in the main study. They were also similar with respect to background, and home exposure to English.

1.1. Test of Auditory Comprehension

Becoming proficient in a second language involves developing both comprehension and production skills in the language. If children are to be educated in English, it is important to establish how well they understand the language in communicative contexts (communicative comprehension) as well as how well they understand linguistic structures without relying on the communicative context (linguistic comprehension) (Bernstein and Tiegerman, 1988). The Test of Auditory Comprehension of Language-Revised (T.A.C.L.-R) (Carrow, 1988) was selected to assess linguistic comprehension in this study.

As the T.A.C.L.-R is designed to assess only comprehension, it contains a large number of items (101) that assess the comprehension of a variety of linguistic structures. It was therefore more appropriate for use in this study than other available tests, e.g. The Test of Language Development (Newcomer and Hammill, 1988), that contain relatively few items for assessing comprehension. It was also felt to contain more "culture-free" items than other tests. In addition the T.A.C.L.-R (Carrow, 1988) was designed not only to identify language impairment, but also to identify structures that pose particular difficulty for the child, (Lund and Duchan, 1988) and it therefore contains a number of items pertaining to each linguistic structure, enabling one to obtain more detailed information about linguistic comprehension.

To establish whether the test would be applicable to the ESL learners in this study, ten subjects, aged three to six years were tested individually on the T.A.C.L.-R.

Administration of the test was standard for all subjects. Instructions to the subjects were similar to those in the original test i.e. subjects were requested to point to one out of three pictures that best represented the verbal stimulus given by the researcher (Appendix 4). A score of 1 was allocated for every correct response.

An incorrect response received no score. Each subject's total score out of 101 was converted to a percentage score. The principal of the nursery school, who knew the pilot subjects well, was asked to rank them according to their understanding of English.

A ranked score of 1 was assigned to the child who had the best comprehension, while the highest rank score was assigned to the child with the poorest comprehension ability. Table 4.2 -below shows the ranked scores in relation to the actual scores obtained by the subjects.

TABLE 4.2 COMPREHENSION SCORE AND TEACHER RANKING OF PILOT SUBJECTS ON THE T.A.C.L.-R (CARROW, 1988)

SUBJECTS	% SCORE ON COMPREHENSION TEST	RANK ASSIGNED BY TEACHER
1	55	8
2	74	2
3	70	3
4	62	6
5	81	1
6	56	7
7	43	9
8	62	4
9	71	3
10	65	5

The Spearman Rank Order Correlation revealed a positively high correlation of 0,953 between ranked scores and actual scores on the T.A.C.L.-R (Carrow, 1988). The test was therefore considered to have validity as a measure of linguistic comprehension when

applied to the ESL speakers in this study. A large scale validation and reliability study was not within the scope of this research.

On the basis of the results achieved by the pilot group, 20 items were deleted from the T.A.C.L. -R (Carrow, 1988) because none of the subjects could identify them correctly. It was assumed that these items are too difficult for ESL pre-school learners. The first thirteen items were also deleted from the T.A.C.L. -R (Carrow, 1988) because they were vocabulary items for assessing comprehension of nouns (items 1 - 10) and adjectives of colour (11 -13).

These vocabulary items were assessed in more detail in the vocabulary test to be described in the next section, and were excluded from the T.A.C.L. -R (Carrow, 1988) to avoid repetition.

The modified comprehension test consisted of 69 items, and is included in Appendix 5.

1.2. Receptive and Expressive Vocabulary Tests

A vocabulary measure was constructed to obtain more detailed information about the subjects' vocabulary proficiency in English, than could be obtained from a thirty minute spontaneous language sample, where the number of conversational topics may have limited the number and range of vocabulary items used. It was not within the scope of this study to take repeated language samples. The purpose of the vocabulary measure was not to assess

the conceptual knowledge underlying vocabulary, but knowledge of English word meaning. The test therefore consisted of vocabulary items that were familiar to the subjects in their home language. It was constructed to incorporate as many lexical fields, sub-fields, and major lexemes, (Crystal, 1982) as would be practically possible and appropriate for pre-schoolers.

Available vocabulary tests such as the Peabody Picture Vocabulary Test (PPVT-R) (Dunn and Dunn, 1981) were considered inappropriate for use in this study. The PPVT-R (Dunn and Dunn, 1981) contains too few items that are designed to assess basic English vocabulary and many of the items are not applicable to the South African population.

1.2.(a) Test Construction

To establish face validity, (Roscoe, 1975) a black Speech-Language Pathologist was consulted in selecting appropriate vocabulary for this test. A list of three hundred English lexemes were selected from the lexical fields, and sub-fields on the Profile in Semantics (Crystal, 1982). The semantic sub-fields together with the major lexemes used in the test are listed in Appendix 6.

A graphic artist illustrated each word using a clear line drawing, that would be easily identified by the children. (See Appendix 7 for an example of the test plate used to assess item 38). To ensure that the vocabulary was familiar to the subjects in their home language, ten subjects were randomly selected from

the larger sample of 30 and tested in their home language by speech-language therapists who speak Zulu, Sotho, Tswana, Xhosa and Tsonga. The test items were translated by the therapists. All the subjects were familiar with all the words in their home languages.

A test booklet, consisting of 75 A4 plates, was compiled by placing four pictures representing one lexical field or sub-field on one plate. The test was used in two ways: firstly to assess the subjects' receptive vocabulary, and secondly their expressive vocabulary.

The items on each plate were numbered from 1 - 4 and two items were randomly selected from each plate. One item was assigned to the receptive sub-test and the other to the expressive sub-test. See Appendix 8 and 9 for the receptive and expressive sub-tests respectively. Each sub-test consisted of 75 items.

1.2.(b) Test Administration

The test was administered individually to 30 subjects in a quiet corner of the nursery school by an English speaking Speech-Language Therapist. Instructions were given in English. Subjects practised with all the pictures on the practise plate before the test was administered, to ensure that they had understood the instructions.

The instructions for the receptive sub-test, required the subject to point to a picture representing a verbal stimulus given by the

tester. (See Appendix 10). The receptive sub-test was administered first to all subjects, and took approximately thirty minutes per subject. The expressive sub-test was administered two days later to ensure that subjects did not remember the items.

The expressive sub-test was administered using a sentence completion format (Lund and Duchan, 1988; Bernstein and Tiegerman, 1988). For example: This man is a farmer. This man is a _____ (postman).

The subjects knew that the word had to be filled in from the rising intonation used by the examiner.

1.2.(c) Scoring of Vocabulary Tests

For both sub-tests each correct response was given a score of 1, while incorrect responses received no score. Each subject's total score out of 75 was converted to a percentage score, for each sub-test.

1.2.(d) Reliability of Vocabulary Tests

Both receptive and expressive sub-tests were re-administered to all thirty subjects two weeks later to obtain a measure of test-re-test reliability (Oller, 1979). The two test scores (T1 and T2) were correlated using the Pearson Product-Moment correlation (Roscoe, 1975).

1.2.(e) Validity of Vocabulary Tests

Criterion-related validity (Oller, 1979) of the vocabulary sub-tests was established by correlating the subjects' scores on each test to a score obtained from a teacher rating of their vocabulary skills.

The teacher of each child at the pilot nursery school was asked to rate each child's vocabulary skills on a 5 point scale, by placing a cross on the relevant point on a line representing a continuum of vocabulary proficiency in English.

The following categories were used:-

- 0 - 1 The child understands and uses only a few English words.
- 1 - 2 The child understands and uses the English words used regularly at school.
- 2 - 3 The child understands and uses English words related to experiences outside the school.
- 3 - 4 The child has a wide vocabulary and understands most of what is said to him.
- 4 - 5 The child's vocabulary is like that of a native speaker of English.

The names of all the children in a particular teacher's group were placed on the same page so that the teachers could rate their vocabulary skills in relation to their peers. (Appendix 11).

The teacher's rating was converted to a percentage score and correlated to each of the test scores using the Spearman Rank Order Correlation Co-efficient (Roscoe, 1975).

1.2.(f) Results of Pilot Study on Vocabulary Tests

The percentage scores obtained by each subject on the receptive and expressive sub-tests at each test session as well as the percentage score on the teachers' rating scales are displayed in Appendix 12.

The mean percentage achieved by all subjects on the receptive and expressive sub-tests at each test session (T1 and T2 respectively) as well as the percentage scores on the teachers' rating scale are reflected in Table 4.3.

The validity and reliability correlation co-efficients for each measure are also included on the table.

TABLE 4.3 MEAN SCORE ON PILOTING OF RECEPTIVE AND EXPRESSIVE VOCABULARY TESTS AT EACH TEST SESSION AND TEACHERS' RATING

Mean % on	Receptive Sub-test		Expressive Sub-test		Teachers' Rating
	T1	T2	T1	T2	72.53
	71.93	73.80	68.90	70.03	
Validity Co-efficients	.95047	.96294	.97453	.98034	
Reliability Co-efficients	0.98413		0.99271		

The data was analysed using the SAS Correlation Procedure (Cody and Smith, 1987). Positively high Spearman Rank Order correlations of between .95047 and .98034 were obtained between teachers' ratings and the receptive and expressive sub-tests at both test sessions, suggesting that the vocabulary test had a high degree of criterion-related validity.

The Pearson Product-Moment Correlation co-efficient revealed a positively high correlation between the first and second testing sessions (T1 and T2) on both the receptive (0.98413) and expressive (0.99271) sub-tests. The vocabulary test therefore had test-re-test reliability.

Although other forms of validity (i.e. content and construct) and reliability were not addressed, the vocabulary test was considered to be reliable and valid for its intended purpose, which was to assess the subjects' knowledge of English vocabulary before and after the intervention phase.

2. PHASE 2. PRE-INTERVENTION ASSESSMENT

All black children at the nursery school were screened, to obtain subjects for the study. The following measures were used to ensure that subjects complied with the subject selection criteria.

2.1. Parent Questionnaire (Appendix 1)

The parent of every black child attending the nursery school received a questionnaire with a covering letter requesting them to provide the following:

2.1.(a) Case History Information

This part of the questionnaire was based on the Child Case History Form used at the University of the Witwatersrand Speech and Hearing Clinic.

It was used to ascertain whether any of the case history factors considered to be "at risk" factors for language impairment were present in the case histories of the subjects.

2.1.(b) Information on the Child's First Language Development

Spolsky (1989, p89) states that, "...limitations that block the learning of a first language, will similarly block the learning of a second language". Children who are impaired in their first language (L1) will be impaired in their second language.

Language impairment may be defined as: "any disruption in the learning or use of language content, form or use or in the

interaction among these components" (Lahey, 1988, p22). To avoid contamination of results, language impaired children were not included in this study, and subjects were selected according to the criterion of age-appropriate L1 development.

In the absence of suitable assessment tools in the indigenous African languages, pragmatic criteria were used to establish whether subjects had acquired their home language without difficulty.

The Bilingual Oral Language Development (B.O.L.D.) measure (Mattes and Omark, 1984) was used to determine whether the subjects were using a range of communication functions and conversational management strategies in their L1. The B.O.L.D. (Mattes and Omark, 1984) is based on taxonomies of illocutionary acts provided by Dore (1975), Halliday (1975) and Tough (1977).

According to Mattes and Omark (1984) children should be expressing all the functions on the B.O.L.D. by the age of three. To enable parents to complete the questionnaire, an example of each type of language behaviour was given (Appendix 2).

The use of pragmatic criteria to identify language impairment is supported by a number of researchers who have found that most language impaired children express a limited range of language functions (Fey and Leonard, 1983; Gallagher and Prutting, 1983; Johnston, 1982; Wollner, 1984). Fey (1986) states that "...it is often along dimensions of language use that language impaired

children differ most from one another and from children developing normally" (p68).

Damico, Oller and Storey (1980) found that teachers who used pragmatic criteria as a basis for referring children suspected of being language impaired, were correct more often than teachers who used syntactic criteria. However, should the B.O.L.D. not be sensitive enough to identify more subtle language problems, the subjects' parents were also questioned regarding their L1 grammar and vocabulary, using questions suggested by Cole (1982) to probe content/form development (Appendix 2). Two subjects had to be excluded from the study on the basis of suspected language impairment. Their speech milestones were significantly delayed, and they were using only a limited number of functions and conversational management devices on the B.O.L.D.

2.1. (c) Language Background

Parents were asked to indicate which languages were spoken at home, by whom and how often. They were also asked to describe the extent of the child's exposure to English at home (Appendix 2)

2.2 Teacher Interview

van Kleeck and Richardson (1990) point out that "Development of a successful communication system is both critical to children's social and cognitive development and inseparable from them" (p1). The subjects' functioning in the developmental domains, related to language acquisition was therefore also assessed. Each of

these systems is discussed briefly.

2.2.(a) Physical Development

Language acquisition is dependant on normal audition, vision, neuromotor control of the speech apparatus, and gross and fine motor skills.

2.2.(b) Cognition

A general cognitive delay, even if it is relatively minor, can cause language impairment. In addition, there are various cognitive pre-requisites for language development, including sensory-motor skills and symbolic functioning (Bernstein and Tiegerman, 1988). Research has shown that language impaired children are often delayed in the development of symbolic skills, despite normal intelligence (van Kleeck and Richardson, 1990).

Symbolic play skills are regarded as reliable indicators of symbolic functioning (Westby, 1980) and language development.

2.2.(c) Social Skills

Poor social adaptation or problems with self-help skills often occur in conjunction with general cognitive delays and language impairment. Behaviourial and emotional disturbances with concomitant socialization difficulties may occur as a result of language impairment.

The physical, cognitive and social skills of the subjects were screened by means of a teacher interview (Appendix 3). It was

assumed that children who were developing normally in these domains, were less likely to be language impaired.

Teachers were also asked to complete the B.O.L.D. questionnaire, with respect to the subjects' use of English. It was immediately apparent however, that despite limited vocabulary and grammatical competence in English, most subjects were expressing the full range of functions and using all conversational strategies on the B.O.L.D.

It seemed that they had acquired all the functions in their L1 and used a variety of verbal and non-verbal means to express these functions in English (e.g. single words, formulaic utterances, facial expression and gesture).

The expression of language functions (i.e illocutionary competence) was therefore excluded as a pre- and post-intervention measure of English proficiency.

2.3 Cognitive Assessment

Each child was assessed on Performance Scale E of the Griffiths Mental Development Scales (Griffiths, 1984) by a psychologist. The purpose of this assessment was to ensure that the subjects selected for the study were age appropriate with regard to non-verbal cognitive functioning.

Scale E of the Griffiths Mental Development Scales (Griffiths, 1984) was selected by the psychologist as an appropriate

screening assessment on the grounds that it relies minimally on spoken instruction and the child can succeed without spoken language. For the subjects in this study it was important to use a test that would not depend on their understanding of spoken instructions in English. Subjects were to be excluded from the study if the difference between their chronological and mental ages on Scale E of the Griffiths Mental Development Scales exceeded 12 months. There were no subjects in this category.

2.4. Hearing Test

The hearing of each subject was screened at 25dB H.L. at 500, 1000, 2000, and 4000Hz (Northern and Downs, 1984) to ensure that subjects did not have a hearing loss that could interfere with language acquisition. All subjects passed the hearing screening test.

2.5. Assessment of Language Proficiency in English

The thirty subjects who met the selection criteria were further assessed to determine their level of language proficiency in English. The following measures were used:

- Modified Test of Auditory Comprehension of Language-Revised (T.A.C.L.-R) (Carrow, 1988).
 - The newly devised vocabulary tests.
- Both these measures were described in the section on phase 1 of the procedure, earlier in this chapter.

- Analysis of a Spontaneous language sample according to:
 - The Profile in Lexical Semantics (PRISM-L) (Crystal, 1982)
 - The Language Assessment Remediation and Screening Procedure (L.A.R.S.P.) (Crystal, et al, 1989).

In the following sections, the procedure for assessing subjects on each measure is described. In addition, the definition of proficiency on each measure, and how subjects were assigned to proficiency groups is discussed. Subjects had to be assigned to proficiency groups, because the intervention group and the two control groups were to be of equal proficiency before the intervention phase, so that one group would not have an unfair advantage over the other two. Subjects from each proficiency group had to be equitably distributed across the intervention and control groups.

2.5.(a) Comprehension and Vocabulary Assessment

Each subject was assessed on the modified TACL-R and vocabulary tests by two students in Speech Pathology.

Prior to the testing period, the group of students were instructed by the researcher as to the administration and scoring of both tests.

The testing was conducted at the nursery school, in a quiet

corner of a classroom, in the office, or in the garden. The two students who were assigned to each subject, administered the tests in the following sequence. On the first morning, after establishing rapport with the subject, the modified TACL-R was administered by student A in the partnership. Student B recorded the subject's responses and scored each response as correct (1 point allocated) or incorrect (0 points allocated). The modified TACL-R took 15 - 20 minutes to administer.

During a break of 30 minutes both students added the points obtained by each subject, and calculated the percentage score. Student B then administered the receptive vocabulary test to the subject, while student A recorded and scored the responses. The test took 20 minutes to administer. A percentage score was calculated. On the second morning student A in each partnership administered the expressive vocabulary test to the subjects while student B recorded the subjects' responses.

Because this test demanded that the subjects' responses be recorded verbatim it took slightly longer (+- 30 minutes) to administer. This test was not scored by the students, but by the researcher, to ensure uniformity in scoring (i.e. that a response was considered acceptable for all subjects and thus assigned a score of 1).

Acceptable responses to each item on the expressive vocabulary test are listed in Appendix 9. For each subject, the score out of 75 was converted to a percentage score.

On the comprehension and vocabulary tests, greater proficiency was defined by higher percentage scores. The mean scores and standard deviations on each of these measures were calculated for all thirty subjects using a SHARP Scientific Calculator EL531 GH D.A.L. A standard deviation score was then assigned to each subject on each measure, according to the position of the subject's score in the distribution of scores around the mean. This process is illustrated in Table 4.4.

TABLE 4.4. MEANING OF ASSIGNED STANDARD DEVIATION SCORES

Standard Deviation Score Assigned	
-2	Subject's score was located between one and two standard deviations below the mean
-1	Subject's score was located between the mean and 1 standard deviation below the mean
+1	Subject's score was located between the mean and 1 standard deviation above the mean
+2	Subject's score was located between 1 and 2 standard deviations above the mean

The actual scores, and standard deviation scores assigned to each subject appear in Appendix 17.

2.5.(b) The Spontaneous Language Sample

The teacher of each subject acted as the conversational partner, since she was the person with whom the child interacted most in English, and would be most comfortable with. The three teachers at the school were trained by the researcher to elicit a spontaneous language sample from each child.

The guidelines given to the teachers (Appendix 13) were compiled from those suggested by Miller (1981) and Lund and Duchan (1988). A limitation of this study is perhaps that more than one sample with different communication partners was not obtained. However, it would have been difficult to structure and capture a peer interaction, for example, as children are inhibited by the presence of adults and recording equipment. It would also seem, from the results, that adequately representative samples were obtained by the teachers, who were all experienced at communicating with children.

The elicitation procedure was kept constant for all subjects. The teachers were asked to elicit the language sample in the three contexts discussed below (Appendix 14).

(i) Elicitation Contexts

- A personal narrative

Subjects were asked to tell the teacher about a personal experience they had recently had. Teachers were asked to encourage subjects to talk about events that they knew the particular child had experienced e.g. a holiday, a birthday party, a visit to the doctor, or a visit to the zoo.

Subjects were also encouraged to talk about familiar everyday events e.g. "what do you do when you wake up in the morning?"

According to Lucariello, Kyratzis and Engel, (1986) the language used by children to talk about everyday routine events is more advanced semantically and syntactically than language elicited in

a toy manipulation context.

- **Sequence Story**

Subjects were asked to tell a story from a set of three scene sequence cards. The Milton Bradley Three Scene Sequence Poster cards were used as stimuli. They were considered to be appropriate to the age and interest level of the children.

- **A picture description**

The stimulus scenes from the MWM Program for Developing Language Abilities (Minskoff, Wiseman, and Minskoff) were used in this context. Subjects were asked to describe the picture. Teachers selected pictures that they considered to be appropriate for the particular child. Each subject was asked to describe three pictures.

As recommended by Crystal, Fletcher and Garman (1989) the language sample was obtained within a 30 minute interaction with each subject. The sample was recorded on FX High Ferro Type 1C60 audio cassettes using a Sony TCM - 5000 EV portable tape recorder.

2.5.(b)(ii) Transcription

The data was transcribed using English orthography according to the procedure suggested by Crystal et al (1989). Prosodic analysis was used only when there would be potential difficulty in interpreting the transcription.

The language samples were transcribed and analysed by two final

year students in Speech-Language Pathology, experienced in this type of analysis. All analyses were checked by the researcher.

2.5.(b)(iii) Analysis Procedures

The spontaneous language samples were analysed using the Profile in Lexical Semantics (P.R.I.S.M.-L) (Crystal, 1982) and the Language Assessment Remediation and Screening Procedure (L.A.R.S.P.). (Crystal et al, 1989) (Crystal, 1982)..

- P.R.I.S.M.-L Analysis

Table 4.5. summarizes the P.R.I.S.M.-L measures, and provides a brief explanation of each.

TABLE 4.5 DESCRIPTION OF MEASURES ON THE PROFILE IN LEXICAL SEMANTICS (P.R.S.I.M.-L)

P.R.I.S.M.-L Measure	Description
Minor Types	Function words including grammatical relation words, social words (e.g. thank you) and semantically "empty" fillers (e.g. um)
Minor Tokens	A count of all instances of each minor type
Minor type-token ratio (TTR)	Total number of minor types divided by total number of minor tokens.
Major Types	Content words that convey meaning (e.g. dog, table).
Major Tokens	A count of all instances of each major type.
Major type-token ratio (TTR)	Total number of major types divided by total number of major tokens.
Semantic Fields	General themes to which content words belong e.g. animals.
Semantic Sub-fields	More specific categories within fields e.g. farm animals, pets.
Minor:Major-token ratio	Total number of minor tokens divided by total number of major tokens.

The following measures on the P.R.I.S.M.-L profiles were used to characterize the subject's vocabulary proficiency.

Total number of minor types.

Minor type-token-ratio.

Total number of major types.

Major type-token-ratio.

Total number of fields.

Total number of sub-fields.

Minor:Major-token-ratio.

Since the number of conversational topics within the thirty minute language sample were kept relatively constant for all subjects, it was assumed that the more proficient subjects would use more major and minor types, more lexical fields and sub-fields, higher minor and major TTR's, as well as minor:major token ratio's between 1,2 and 1,5, which represents a normal balance between major and minor lexemes (Crystal, 1982).

Means and standard deviations were calculated for each of the P.R.I.S.M.-L measures, and subjects were assigned a standard deviation score on each measure. The actual scores, and standard deviation scores assigned to each subject appear in Appendix 18.

The minor and major TTR's proved to be problematic, since a number of subjects (specifically subjects 1,2,12,21 and 23) had high TTR's that were not an accurate reflection of their proficiency. Their high TTR's were due to the fact that they

produced very few sentences. This resulted in the use of a few types, once or twice only, and consequently, high type-token ratios. The minor and major TTR's were therefore not considered valid indices of proficiency.

Because minor:major token ratio's both below 1,2 and above 1,5 reflect poor proficiency, means and standard deviations could not be calculated for this measure. The TTR's and minor:major ratio's were therefore not used to assign subjects to proficiency groups.

Table 4.6 is a summary of the total number of each standard deviation score (-2, -1, +1, +2) assigned to each subject on the comprehension, vocabulary and PRISM-L measures.

An overall standard deviation score was assigned to each subject according to where the majority of his/her measures were located. This score appears in Table 4.6 in the column headed "Overall"

TABLE 4.6 THE TOTAL NUMBER OF EACH S x SCORE ASSIGNED TO EACH SUBJECT AND THE Sx SCORE WHERE THE MAJORITY OF THE MEASURES WERE LOCATED

Subjects	-2	-1	+1	+2	Overall
1	7	0	0	0	-2
2	6	1	0	0	-2
3	2	5	0	0	-1
4	0	4	3	0	-1
5	0	1	6	0	+1
6	0	0	7	0	+1
7	0	1	6	0	+1
8	0	3	4	0	+1
9	0	0	6	1	+1
10	0	2	4	3	+1
11	4	3	0	0	-2
12	7	0	0	0	-2
13	0	7	0	0	-1
14	0	5	2	0	-1
15	0	4	3	0	-1
16	0	1	6	0	+1
17	0	1	4	2	+1
18	0	0	3	4	+2
19	0	0	4	3	+1
20	0	0	2	5	+2
21	5	2	0	0	-2
22	3	4	0	0	-1
23	2	5	0	0	-1
24	0	6	1	0	-1
25	2	1	4	0	-1
26	1	1	5	0	+1
27	0	0	3	4	+1
28	0	0	3	4	+2
29	0	0	5	2	+1
30	0	0	2	5	+2

It is clear from Table 4.6, that very few subjects had the majority of their scores at the upper and lower ends of the

distribution of scores. For only eight subjects (1, 2, 12 and 21) the majority of scores were located two standard deviations below the mean, or two standard deviations above the mean (subjects 18, 20, 28, 30).

Since it would have been impossible to distribute the few subjects in the second standard deviation groups equally across three groups for the intervention phase, subjects were re-assigned to two levels of proficiency on each measure. If their score was below the mean, they were assigned to the low proficiency group (-) on that measure. If the score was above the mean, the subject was assigned to the high proficiency group (+) on that measure. (See Appendix 19)

Once the subjects' syntactic proficiency on the L.A.R.S.P. measures had been established, they were assigned to an overall proficiency group based on all the pre-intervention measures.

L.A.R.S.P. Analysis

The L.A.R.S.P. was derived from a comprehensive description of English grammar, by Quirk and Greenbaum, (1973), considered by Crystal et al (1989) to be systematic and empirically based.

The L.A.R.S.P. has wide application in the field of language pathology, and has been used to characterize the syntax of children acquiring English as a second language (Duncan, 1989).

Each consecutive stage on the L.A.R.S.P. profile represents more advanced syntactic complexity (Crystal et al, 1989). Each stage should thus be well represented if a child has a well developed syntactic system.

The L.A.R.S.P. describes the general sequence of syntactic development in L1 acquisition, from 9 months to 5 years and is, for reasons discussed in the introduction, an appropriate tool for characterizing L2 development. It also provides more detailed information on the order of acquisition of various structures, eg. the question form and the negative in the verb phrase, but this information was not used to define proficiency in this study. The L.A.R.S.P. was used descriptively, to characterize the subjects' clause, phrase and word structure development in English.

Since this study employed a group design, various measures had to be derived from the L.A.R.S.P. profiles to facilitate between group comparisons.

The following measures were calculated for each individual subject, with respect to each level of analysis on the L.A.R.S.P.

Clause Structure

- The proportion of the total number of clause structures occurring at stages I, II, III, IV and V of the profile, were converted to percentages. Stage VI and VII clause structures were not included because only three out of the

thirty subjects used structures at these stages.

- The proportion of the total number of stage V structures that were co-ordinate, sub-ordinate or post-modifying clauses, were converted to percentages.

These measures were included because subjects seemed to be using a high proportion of co-ordinate clauses, joined by the conjunction "and". This resulted in a high percentage of Stage V structures, which it seemed, was not an accurate reflection of proficiency.

- The number of clause structure types (out of a possible 64) represented in the sample, was computed. All clause structure types are listed in Appendix 15.

Phrase Structure

At the phrase level, verb phrases were examined separately from other phrases, including noun phrases, adverbial phrases, and adjectival phrases. The latter are referred to as phrase structures (other).

Phrase structures (other)

- The proportion of the total number of phrase structures (other) occurring at stages II, III, IV, V and VI of the profile, were expressed as percentages. Although post-modification clauses are profiled under stage V phrase structures, they were lumped together with stage V clause

structures in this study. Thus the only phrase structure at stage V, was post-modifying phrases.

- The number of phrase structures (other), out of a possible 21, represented in the sample, was computed. Phrase structure (other) types are listed in Appendix 16.

Verb Phrases

Since the verb phrase is particularly complex in English, and second language learners are often reported to have difficulty with it, (Ellis, 1985), the verb phrase was examined in more detail than the other phrase structures, by analyzing each verb phrase component separately.

- The proportion of the total number of verb phrases containing each of the verb phrase components (VV, Vpart, Auxo, Auxm, Cop, and Neg V), were expressed as percentages. The percentage of verb phrases that were complex was also computed. Complex VP's are those that contain two or more verb phrase processes. The "2 aux" verb phrase structure at stage IV was excluded, since only two out of the thirty subjects made use of it.
- The number of verb phrase components (out of a possible 8) represented in the sample, was computed.

Expansions

- The ratio of Stage II and III clause structures that were

expanded, was calculated. A ratio of 1 meant that each clause structure had been expanded at least once, while a ratio greater than 1 meant that each clause structure had been expanded more than once.

A ratio of less than 1 meant that not all clause structures had been expanded.

Only stage II and III clauses were used in the calculation of the ratio as expansions are only marked up to stage III. Expansions were not analyzed in more detail with respect to the type of expansion as expansions of the subject, verb and post verbal elements were equally represented, in most subjects' samples.

Word Structures

- The proportion of the total number of word structures that were either -ing, pl, -ed, -en, gen, 3s, 'cop, 'aux, n't, or est/er/ly (lumped together because only three out of thirty subjects used any of these structures), were expressed as percentages.
- The total number of word structures out of a possible 12, represented in the sample, was calculated.

Most L.A.R.S.P. measures were expressed as percentages because of large variations in sample length, that were due to differences amongst subjects in spontaneity, and verbosity, rather than proficiency. A simple count of the number of structures on any of the clause, phrase or word structure measures, was therefore

not feasible.

According to some investigators (Ellis, 1985), second language learners may not use certain syntactic structures at all. This would restrict the range of L2 structure types used. The number of clause, phrase and word structure types, appearing in the subjects' language samples, were thus included as measures of proficiency. It was assumed that subjects would use a wider range, and thus more structure types as they became more proficient in English.

Syntactic Errors

Only those error categories on the L.A.R.S.P. profile that occurred frequently in the samples, and were made by most of the subjects, were included in the analysis of syntactic errors. The following error categories were included:

- Concord errors, represented by the proportion of the total number of clause structures in which errors of subject-verb agreement were made, (expressed as a percentage).
- Determiner, Preposition, Pronoun, and Auxiliary errors, represented by the proportion of the total number of determiners, prepositions, pronouns, and auxiliaries on which errors were made (expressed as percentages).

L.A.R.S.P. Summary Measures

The following measures were derived from Section B of the profile:

- **The ratio of spontaneous sentences to responses**

The total number of spontaneously produced sentences was divided by the total number of normal responses to teacher stimuli. A ratio of 1 indicated that the subject produced an equal number of spontaneous utterances and responses. A ratio greater than one, resulted from a higher number of spontaneous utterances while a ratio less than one was due to a higher number of responses.

- **The ratio of normal to abnormal responses**

This measure was calculated by dividing the total number of normal responses by the total number of abnormal responses. Abnormal responses include:

- 1) instances where the subject fails to respond to the teacher's stimulus, possibly as a result of comprehension difficulties; and
- 2) structural abnormalities where the grammatical pattern of the subject's response does not match that required by the teacher's stimulus e.g. T: "What's he doing?" S: "Yes"

- In addition, the mean sentence length (total number of words divided by total number of sentences) and the mean number of

sentences per turn (total number of sentences divided by total number of teacher stimuli) were calculated.

Syntactic proficiency was defined on the L.A.R.S.P. measures by calculating the group mean for each measure. Group means on all L.A.R.S.P. measures appear in Appendix 20. On the basis of the average use of each L.A.R.S.P. measure, the following decisions were made regarding proficiency.

- 1) Since the average use of Stage IV clause structures was low in comparison to all other stages, and Stage IV represents advanced syntactic complexity, the use of Stage IV structures was considered to reflect higher levels of proficiency.

Subjects were assigned to the higher proficiency group (+) if they used Stage IV structures and to the low proficiency group (-) if they did not.

- 2) The average use of Stage V structures was higher than expected, but was due to over-use of co-ordinate clauses joined by "and". Subjects were assigned to the higher proficiency group (+) if they used sub-ordinate and/or post-modifying clauses, and to the lower proficiency group (-) if they did not.
- 3) Subjects used predominantly Stage II and III phrase structures (other). Stages IV, V and particularly stage VI

were not as well represented. Subjects were assigned to the higher proficiency group (+) if they used Stage VI phrase structures (other) and to the lower proficiency group(-) if they did not.

- 4) With respect to the expansion ratio, the number of clause, phrase, (other and verb) and word structure types, as well as the summary measures, subjects were assigned to the higher proficiency group if their score was above the group mean, and to the low proficiency group if their score was below the group mean.
- 5) The percentage of syntactic errors was not used to define proficiency because errors in second language usage may occur for a variety of reasons, including developmental processes, which are in fact positive factors in the acquisition process.

The proficiency group to which each subject was assigned on each of the L.A.R.S.P. measures appears in Appendix 21.

2.6. Allocation of Subjects to Proficiency Groups

Subjects were assigned to the overall proficiency group where the majority of their scores were located.

Table 4.7 is a summary of the number of measures on which each subject was assigned to the high (+) or low (-) proficiency group, and shows the overall proficiency group to which each subject was assigned.

**TABLE 4.7 NUMBER OF MEASURES ON WHICH EACH SUBJECT'S SCORES
COULD BE LOCATED IN THE LOW (-) OR HIGH (+) PROFICIENCY
GROUP AND THE OVERALL PROFICIENCY GROUP**

Subjects	+	-	Overall Proficiency Group
1	0	20	-
2	1	19	-
3	4	16	-
4	13	7	+
5	15	5	+
6	16	4	+
7	10	10	-
8	12	8	+
9	18	2	+
10	19	1	+
11	1	19	-
12	0	20	-
13	3	17	-
14	6	14	-
15	13	7	+
16	12	8	+
17	16	4	+
18	16	4	+
19	17	3	+
20	17	3	+
21	1	19	-
22	4	16	-
23	2	18	-
24	8	12	-
25	13	7	+
26	16	4	+
27	17	3	+
28	17	3	+
29	15	5	+
30	18	2	+

As is evident from Table 4.7, subject 7's scores were distributed equally across the low and high proficiency groups. This subject was assigned to the low proficiency group, so that there would be a total of 12 low proficiency subjects, which would make equal distribution of low proficiency subjects across the intervention and control groups, possible.

Table 4.7 also shows that some subjects (specifically subjects 4, 8, 15, 16, 24 and 25) were not clearly definable as low or high proficiency subjects. Despite the fact that they were allocated to the proficiency group where the majority of their scores were located, they had a substantial number of scores in the other proficiency group.

Thus, to ensure that the proficiency grouping was valid, the scores attained by each proficiency group on the comprehension, vocabulary and P.R.I.S.M. measures were compared statistically to establish significant differences. The analysis of variance procedure (ANOVA) was used.

The L.A.R.S.P. measures were compared descriptively, for reasons explained in the data analysis section. Proficiency group means on the comprehension, vocabulary and P.R.I.S.M.-I measures, as well as the F values resulting from the ANOVA, and the probability levels at which the null hypothesis of equal means was rejected, appear in Appendix 22(a).

The probability levels are all well below 0,05 confirming that the differences between proficiency groups were highly significant on all measures.

The differences between proficiency groups on the minor and major TTR's were not statistically significant, confirming that these measures were of questionable validity as indices of proficiency.

The proficiency group means on the L.A.R.S.P. measures appear in Appendix 22 (b).

The proficiency groups differed clearly from each other on most L.A.R.S.P. measures, not only those used to define proficiency. The more proficient group (+) used predominantly stage III clause structures while the less proficient group (-) used predominantly stage I structures.

With respect to stage V structures, the more proficient group used significantly more sub-ord and post-mod clauses. They also used more stage III phrase structures (other). There were clear differences between the proficiency groups in the use of the verb phrase, and word structures. Thus, although subjects had been assigned to the proficiency group where the majority of their scores were located, the proficiency groups were significantly different on all measures and thus valid.

3. PHASE 3 THE INTERVENTION PHASE

3.1. Allocation of Subjects to the Intervention and Control Groups

To ensure that the intervention and control groups were of equivalent proficiency before the intervention was initiated, four subjects from the lower proficiency group (-) and six subjects from the higher proficiency group (+) were allocated to each group. In addition, a stated aim of the study was to determine whether exposure to English at home, and length of attendance at an English pre-school had a significant effect on proficiency. Both these variables were found to be significant determinants of proficiency (see Results section A) and therefore subjects were allocated to ensure equal numbers of subjects from each home and school exposure group in the intervention group (A) and the control groups (B and C). There were 10 subjects in each group and the mean age of each group was approximately the same.

Table 4.8 shows the allocation of Subjects to Groups A, B and C.

TABLE 4.8 ALLOCATION OF SUBJECTS TO INTERVENTION (A) AND CONTROL GROUPS , B AND C

Group	Subject Number	Proficiency Group	School Exposure	Home Exposure	Mean Age
A	1	-	1	1	4,5
	2	-	1	1	
	3	-	2	1	
	4	+	1	2	
	5	+	2	2	
	6	+	3	2	
	7	-	2	1	
	8	+	2	2	
	9	+	2	1	
	10	+	1	2	
B	11	-	1	1	4,7
	12	-	1	1	
	13	-	1	1	
	14	-	2	1	
	15	+	2	2	
	16	+	2	2	
	17	+	1	2	
	18	+	2	2	
	19	+	3	1	
	20	+	2	2	
C	21	-	1	1	4,6
	22	-	1	1	
	23	-	2	1	
	24	-	2	1	
	25	+	2	2	
	26	+	1	2	
	27	+	1	1	
	28	+	2	2	
	29	+	2	2	
	30	+	3	2	

Key: School Exposure

- 1 = school attendance less than a year
- 2 = school attendance between 1 and 2 years
- 3 = school attendance more than 2 years

Home Exposure

- 1 = Parents do not speak to the child in English
- 2 = Parents do speak to the child in English

Proficiency

- = low proficiency
- + = high proficiency

3.2. Management of Group A

Group A was the intervention group. Subjects in this group received language intervention as a group, from a qualified speech-language therapist for twelve weeks, three times per week. Each session lasted forty five minutes. The intervention was conducted in a group context for the following reasons:

- 1) the subjects were not language impaired, and the costs and time involved in individual therapy were not warranted or necessary
- 2) the group context lends itself favourably to socially appropriate interaction

There were no specific criteria for selection of the therapist other than experience in language therapy, and interest in the application of her knowledge and skills to ESL children. The length of the intervention phase was based on the results of two smaller pilot studies that provided language intervention to pre-school ESL subjects over a six week period (Corke, 1988; Poulitsis, 1988).

In both studies the English proficiency of ESL subjects improved considerably but without reaching levels of statistical significance. The length of intervention was doubled in this study to provide the opportunity for significant improvement in the subjects' English proficiency. The intervention approach used to facilitate acquisition of English, was based on the integrated definition of language, and theoretical account of how it is acquired, presented in Chapter 3.

Specific goals were set for each intervention session and activities that were conducive to the subjects' spontaneous use of the target utterances were employed.

The therapist modified her own language to emphasize target forms, as well as to respond to the communicative needs of the children, using the various techniques (input features) described in Chapter 3.

3.2.(a) Specific Goals of Intervention

Specific goals related to content-form interactions were formulated for the whole group, based on the results of the pre-intervention assessment. The language therapist formulated the goals together with the researcher.

3.2.(a)(1) Specific Goals related to Content

The Profile in Lexical Semantics (Crystal, 1982) was used as the basis for formulating goals to facilitate the acquisition of vocabulary. A semantic sub-field was chosen as the topic or theme for a particular session, or in some cases, group of sessions. Modifications were made to the sub-fields according to the suggestions made by Blank and Marquis (1987). These authors argue that topics should be offered to children in relevant and meaningful ways. Category based topics such as "CLOTHING", "ANIMALS", and "FOOD", are not what conversations are normally about. Blank and Marquis (1987) suggest an adaption of these category-based topics termed "predicating the concept" (p6).

This means that the topic is not represented by a noun (e.g. colours, numbers, food etc) but by a relevant predicate that modifies the noun e.g. "Clothes" was represented by the theme "getting dressed in the morning".

Blank and Marquis (1987) suggest the use of activity-based intervention to create a context in which to talk about a topic, and many intervention sessions were in fact activity based e.g. making something or playing a game. The therapist's input was always supported by real props or pictures, to ensure that language and perception were closely matched, and thus context bound.

3.2.(a)(ii) Specific Goals related to Language Form

Since the intervention was group oriented, goals were not selected according to individual L.A.R.S.P. profiles. The specific goals pertaining to language form were formulated on the basis of the group means obtained on the pre-intervention L.A.R.S.P. measures. The following structures were targeted:

1) Stage IV Clause Structures

Since these structures represented only 6,69% of the total number of clause structures used in the pre-intervention samples, they were targeted in the intervention.

2) Stage V Sub-ordinate and Post-modifying Clauses

These structures were very poorly represented. Only 21,67% of Stage V structures were sub-ordinate clauses and even fewer (3,09%) were post-modifying clauses.

3) Verb Phrase Components

Modal auxiliaries and verb phrases containing negatives were targeted because of their low percentage occurrence. The verb phrase components, VV and Vpart were targeted because not all children were using these structures.

4) Expansions

Expansion of all clause structure components were targeted to increase the expansion ratios. To increase expansion ratios the phrase structures listed in 5) below were targeted (in addition to the verb phrase components described above).

5) Stage IV, V and VI Phrase Structures

These structures were poorly represented in terms of average percentage use. As three group A subjects were not using Stage IV phrase structures and six subjects were not using Stage VI structures, these structures were also targeted.

6) Morphological Structures

Since the average use of the third person singular morpheme (3s) was low, and since the past tense form -ed, as well as the plural (-pl) were not used by all subjects, these word structures were also targeted.

All the above structures were taught using procedures outlined by Lewis and Penn (1989), in their book "Language Therapy: A Programme to Teach English".

No specific goals were formulated for dealing with syntactic errors. It was anticipated, that some errors would occur less frequently as proficiency in using all the above structures increased, while others might occur more frequently as the learner constructed the rules of the new language.

Through the intervention, group A was exposed not only to a form of instructed input that was different to the natural exposure in the pre-school, but also to an increased quantity of input. To ensure that any improvement in group A's proficiency was due to the specific goals, principles and techniques of language intervention, and not just to an increased quantity of learner directed input in English, control group B was included.

3.3. Management of Control Group B

A student teacher interacted with Group B subjects at the same time as Group A was receiving intervention. She was asked to converse with the children, and was aware that the purpose was to facilitate their acquisition of English. The differences in the input provided by the language therapist and student teacher for Group A and B, were quantified by analyzing three sessions with each group, using a framework that was based on Fey's (1986) conceptualization of language intervention.

3.4. Quantification of Differences in input to Groups

A and B

The therapist and student teacher's input was transcribed verbatim from three video recordings of their interactions with groups A and B respectively.

Their interaction with each group was then analyzed in terms of the goals they had formulated, the context they had created, and the actual features of their input.

3.4.(a) Specific Goals

The specific content and form goals of the therapist or student teacher, were identified. The therapist formulated specific goals with regard to content and form for each session, while the teacher chose a particular conversational topic for each session. She conversed with Group B subjects about this topic throughout the session, sometimes using a picture stimulus. Her topics could naturally, also be represented as fields or sub-fields on the P.R.I.S.M.-L.

The essential difference between the two groups was that the student teacher did not formulate specific goals with regard to language form.

3.4.(b) Intervention Context

The following areas were examined:

i) Use of the Informativeness Principle

The input provided by the therapist and student teacher was characterized according to whether they exploited this principle. Both created contexts in which this principle was applied, but the therapist made more explicit use of it. She used false assertions, and materials that increased informativeness.

For example, to facilitate the acquisition of the stage IV phrase structure D Adj, Adj N (L.A.R.S.P.) the therapist used big and small, red, blue and green circles, squares and triangles. To elicit the structure "a big blue triangle" she placed before the children small and big, blue and red, circles and triangles. She then asked one child to describe the shape he/she was holding (out of view of the other children). The child had to use the entire phrase "a big blue triangle", as providing less information would not result in correct identification of the shape, by the group.

ii) Creating the Motivation to Communicate using Target Structures

The language therapist structured the intervention contexts in Group A in such a way that the children were encouraged to use target forms.

She often hid objects away from the children so that they would use vocabulary and syntactic forms in requests. (e.g. the child would have to ask, "Where is the big blue circle?", After he/she had been instructed to put a red star on a big blue circle, that had been hidden away by the therapist). This structuring of the context was not seen in the student teacher's input to Group B.

iii) Presentation of Target Forms in Multiple Contexts

This was done by both the language therapist and the student teacher. In targeting colour names for e.g. the language therapist referred to the yellow sun, green grass, etc.

In developing a party theme, the student teacher referred to different kinds of parties, e.g. stork party, birthday party etc.

iv) Cohesiveness of Stimuli

This principle was well adhered to by both the language therapist and the student teacher. Topic shifts were well marked by both. The differences between groups A and B are summarized in Table 4.9.

TABLE 4.9 DIFFERENCES BETWEEN THE GOALS AND INTERVENTION CONTEXTS FOR GROUPS A AND B

		Group A (Language Therapist)	Group B (Student Teacher)
Goals	Content: Topics Form: Structures	e.g. growing flowers shapes, size, colour DAdj Adj N} Pr D.AdjN} (St IV Phrase structures)	e.g. Having a Party None
Context	Use of the informativeness principle	Explicit through false assertions, materials used	Implicit
	Creating the motivation to communicate	Hiding objects	Relied on spontaneous imitations
	Presentation of the target forms in multiple contexts	Yes	Yes
	Cohesiveness of the Stimuli	Yes	Yes

3.4.(c) Input Features

The features of the input used by both adults with group A and B were coded by counting the number of times each specific input was adult initiated or occurred as a response to a child's communication. These two categories were further sub-divided into questions and other stimuli. Input features were discussed in Chapter 3, and are used synonymously with "techniques". In addition, the following therapist/teacher inputs emerged:

- Repetitions of a child's utterance (spontaneous or response). The exact purpose of these repetitions is not known, but may represent the adult's attempt to keep the conversation going.
- Verbal Reinforcement or comments made by the adults to reward the correctness of responses (e.g. good!; right!).
- Other This category was included to incorporate those teacher/therapist inputs that could not be accommodated in other categories. It consisted mainly of directives from the adults to maintain order in the groups (e.g. Sit still. Don't break the picture, etc).

The percentage occurrence of each type of adult communication was then calculated by dividing the total number of occurrences of each by the total number of adult communications. The mean over the three sessions was calculated for each technique.

Table 4.10 reflects the mean percentage occurrence of each type of input used by the therapist with group A and the student teacher with group B.

TABLE 4.10 MEAN PERCENTAGE OF EACH TYPE OF INPUT FEATURE USED BY THE LANGUAGE THERAPIST AND STUDENT TEACHER

Input Features	Language Therapist (Group A)	Student Teacher (Group B)
False Assertions	6.7	0
Stimuli to Elicit the Target Form as a Response	23.46	26.25
Stimuli to Elicit the Target Form as a Spontaneous Utterance	9.5	27.5
Focused Stimulation	5.59	0
Stimuli to Encourage Language outside Immediate Context	2.79	2.5
Vertical Structuring	7.26	16.25
Expansions	3.91	0
Expatiations	5.03	3.75
Forced Alternative	1.68	1.25
Sentence Completion	1.68	0
Facilitating Metalinguistic Development	4.47	0
Repetitions of Child's Utterance	3.91	11.25
Verbal Reinforcement for Target Utterance Production	12.85	1.25
Other eg. Directives to Maintain Order	3.35	6.25
Complexity (Percentage of Stimuli that were Complex Sentences)	4.47	12.64

Inputs that were not used by the student teacher with Group B, but were used by the language therapist included: false assertions, focused stimulation, expansions, sentence completion and facilitators for metalinguistic development. These are probably specific techniques used by language therapists, and do not occur as frequently in normal conversations with children. Both the therapist and the student teacher used similar

frequencies of the following stimuli: eliciting a target form as a response, stimuli to encourage language outside the immediate context, expatiations, and the forced alternative.

It was interesting that stimuli encouraging the target form as a spontaneous utterance were used more frequently by the student teacher (27.5%) than the language therapist (9.5%). It is possible that the more natural type of discourse used by the student teacher was the reason for this discrepancy. This suggests that a certain amount of "naturalness" has to be sacrificed in structured intervention with specific syntactic targets (Fey, 1986).

The student teacher also used more vertical structuring i.e. probes to encourage children to elaborate on responses. It was noted that she frequently asked a further question when a subject had responded to a question. This is clearly reflected in her higher percentage of questions (53.75%) and repetitions of the children's responses (See Table 4.11). The student teacher also used more complex language than the language therapist. (12.64% of her utterances were complex sentences).

TABLE 4.11 MEAN PERCENTAGE OF QUESTIONS VS OTHER STIMULI PRODUCED BY THE THERAPIST AND TEACHER

	THERAPIST (GROUP A)	TEACHER (GROUP B)
QUESTIONS	32.96	53.75
OTHER	67.04	46.25

The language therapist used fewer questions (32.96%) than other stimuli (67.04%) and used less complex language than the student teacher (only 4.47% of her utterances were complex).

Both these findings can be related to the language therapist's training and increased sophistication in modifying her input to young children. Her use of verbal reinforcement when children produce target utterances is also a function of her training, since verbal reinforcement (e.g. "you said that nicely", "good", "well done") is not part of natural communication to young children (only 1.25% of the student teacher's utterances were reinforcements "right! "sure!").

Both the student teacher and the language therapist used a good balance between adult-initiated input and responses to child-initiated input (Table 4.12) suggesting that they both allowed the children to initiate conversation.

TABLE 4.12 MEAN PERCENTAGE OF ADULT INITIATED VS RESPONSES BY THE LANGUAGE THERAPIST AND STUDENT TEACHER

	THERAPIST (GROUP A)	TEACHER (GROUP B)
Adult Initiated Stimuli	46.37	47.5
Responses to Child- initiated interaction	53.63	52.5

Summary: The main differences in the input provided by the language therapist for Group A and the student teacher for Group B, were the following:

- 1) The language therapist formulated very specific goals for facilitating the acquisition of form and content, whereas the student teacher concentrated on very general content goals.
- 2) The student teacher did not structure the non-linguistic context as the language therapist did.
- 3) The language therapist used some techniques that were not used at all by the student teacher.
- 4) The student teacher used more questions and syntactically complex sentences in her input to Group B.

The input provided for Group A was therefore qualitatively different to that provided for Group B, but both groups received quantitatively more input in English than they would have by attending nursery school only. Control Group C was thus included.

3.5. Management of Control Group C

Group C was included to ensure that any improvement in English proficiency observed in Groups A and B was due to the input they had received and would not have occurred as a result of their regular attendance at the nursery school. The input provided to the ESL subjects by the teachers at the nursery school contained the features of child-directed language, used by the therapist and student teacher with groups A and B. However, group B

received more input than group C. Group C comprised those subjects who received no extra input in English over and above that provided by the nursery school teachers, in the regular programme. The school was managed on the same basis as most regular pre-schools. Each day consisted of both structured and unstructured activities, with free and uninhibited communication between the teachers and children. The three teachers were all monolingual English speaking females. Each teacher was responsible for a particular age group. Informal observation revealed no particular differences in the type of language input provided by individual teachers. All teachers adapted their input to the ESL learners, when communicating with them as individuals.

4. PHASE 4 POST INTERVENTION ASSESSMENT

The post intervention assessments were conducted within a week after the last session of the intervention phase. This was to prevent any further acquisition of language that could obviously not be attributed to the intervention. The assessment procedures that were used in the pre-intervention phase to establish the subjects' English proficiency were repeated.

These included:

- 4.1. the modified T.A.C.L.-R (Carrow, 1988)
- 4.2. the receptive and expressive vocabulary tests
- 4.3. analysis of spontaneous language samples according to the
 - (a) P.R.I.S.M.-L (Crystal, 1982) and
 - (b) L.A.R.S.P. (Crystal et al, 1989)

All measures were obtained in identical fashion to the pre-intervention assessment phase.

D. DATA ANALYSIS

The data derived from the comprehension, vocabulary and P.R.I.S.M.-L measures was subjected to statistical analysis using the SAS General Linear Models Procedure (Cody and Smith, 1987). The L.A.R.S.P. data was analysed by calculating group means for all pre- and post-intervention scores, as well as the difference between the pre- and post-intervention means. Standard deviations were calculated on the difference scores.

The L.A.R.S.P. measures could not be analysed statistically because the percentage occurrence of structures at each stage was restricted by the percentage occurrence of structures at all other stages. (e.g. if a subject's percentage use of stage I structures was 75%, the percentage occurrence of structures at all other stages could not be more than 25%). L.A.R.S.P. results were analysed descriptively.

1. Analysis of the Pre-intervention Results

The following subject variables were investigated in relation to pre-intervention results:

1.1. Home Exposure to English

To determine whether subjects whose parents spoke to them in English (Home exposure Group 2) differed significantly from subjects whose parents did not, (Home exposure Group 1), the

comprehension, vocabulary and P.R.I.S.M.-L scores attained by subjects in each home exposure group were subjected to a one-way analysis of variance.

The L.A.R.S.P. results were analysed descriptively. It was necessary to establish whether home exposure groups differed significantly on the pre-intervention measures, so that subjects could be allocated to the intervention and control groups accordingly.

1.2. Length of Attendance at an English Pre-School

School exposure groups could not be compared statistically, because there were only three subjects in the third school exposure group (those who had attended an English pre-school for two years or longer). The analysis of variance procedure cannot cope with unbalanced numbers across groups (Rosner, 1975). At the same time, it was undesirable to re-group subjects, because the subjects in the third school exposure group seemed, subjectively, to have attained higher scores than the subjects in the second school exposure group.

In addition, it was not possible to collapse the home and school exposure groups, by assigning a single exposure rating, because it was assumed that the exposure to English at home and at school was qualitatively different. At home, subjects were exposed to English spoken by bilinguals, while at school the English was spoken by monolinguals. The school exposure group means were compared descriptively, to determine how school exposure affected

proficiency, so that subjects from each school exposure group could be assigned to the intervention and control groups accordingly.

1.3. Age

The age variable was not analysed separately, because it interacted to a large extent with school exposure and proficiency grouping. All the subjects in the youngest age group (3,0 - 3,11; n=6) were also in school exposure group 1 (i.e. those subjects who had attended an English pre-school for less than a year) and in the lower proficiency group.

Only three subjects from each of the other two age groups (4,0 - 4,11; (n=14); and 5,0 - 5,11; (n=10)) were in school exposure group 1. The remaining subjects (n=11) in the 4,0 - 4,11 year old group were in school exposure group 2. The seven subjects remaining in the 5,0 - 5,11 year old age group were equally distributed across school exposure groups 2 and 3. Age group means would therefore not differ significantly from school exposure group means, and an analysis of the age variable would have been redundant.

2. Analysis of the Difference between Pre- and Post-Intervention Scores

The difference between each subject's pre- and post-intervention scores was calculated by subtracting the pre-intervention score from the post-intervention score. The difference between the pre- and post-intervention means was calculated for the intervention and control groups (A, B and C).

An analysis of variance was used to compare intervention groups. If statistically significant differences emerged, Duncan's Multiple Range Test (Cody and Smith, 1987) was used to determine which groups differed significantly from each other.

E. HYPOTHESES

The following hypotheses were formulated regarding the effects of the intervention and control group treatments.

HYPOTHESIS 1

The difference between pre- and post-intervention scores would be significantly larger for group A than for groups B and C.

HYPOTHESIS 2

The difference between the pre- and post-intervention scores would be significantly larger for group B than for group C.

CHAPTER 5

RESULTS AND DISCUSSION

This chapter is divided into two sections. The results of the analysis of the pre-intervention scores is presented in section A, followed by the results of the comparison between groups A,B and C on the difference between the pre- and post-intervention scores, in section B.

In each case, the results of the comprehension, vocabulary and P.R.I.S.M.-L measures are presented first, followed by the results of the L.A.R.S.P. analysis.

A. PRE-INTERVENTION RESULTS

1. Home Exposure to English

1.1. Comprehension, Vocabulary and P.R.I.S.M. measures

The mean scores attained by each home exposure group on each of the above measures, are displayed in Table 5.1.

The F values resulting from the ANOVA (Analysis of variance) as well as the probability levels ($pr > F$) at which the null hypothesis of equal means was rejected, also appear on the table.

TABLE 5.1. HOME EXPOSURE GROUP MEANS ON THE COMPREHENSION VOCABULARY AND P.R.I.S.M.-I MEASURES

	Home Exposure Group 1	Home Exposure Group 2	F Value	pr > F
Comprehension (%)	55,55	72,28	11,84	0,0018
Receptive Vocabulary (%)	52,98	66,00	5,4	0,0276
Expressive Vocabulary (%)	41,14	51,7	6,07	0,0202
Number of minor types	20,0	36,33	16,8	0,0003
Number of major types	31,26	52,73	13,27	0,0011
Minor TTR	0,33 (0,25)*	0,21	4,60	0,0408
Major TTR	0,67 (0,53)*	0,53	6,05	0,0203
Number of Fields	13,8	19,06	8,43	0,0071
Number of Sub-fields	21,6	32,4	11,33	0,0022
Minor: Major token ratio	1,35	1,77	9,64	0,0043

[*TTR's in brackets represent corrected calculations, excluding subjects 1,2,11,21 and 23 whose TTR's were inflated as a result of limited expressive ability].

The differences between home exposure groups are statistically significant at the 0.05 level, on all measures. Those subjects whose parents spoke to them in English (Group 2) were thus more proficient than those subjects who did not interact with their parents in English (Group 1).

The exception to the above generalization concerns the results of the minor and major TTR's.

When the corrected scores are compared, the TTR's do not seem to be affected by home exposure to English.

Although home exposure group 2 used more major and minor types than group 1, they also used more tokens, and their TTR's were therefore not significantly higher.

The minor:major token ratio's show that both home exposure groups used more minor than major tokens, but the ratio was higher for home exposure group 2. Crystal (1982) suggests that a ratio between 1,2 and 1,5 reflects a normal balance between major and minor tokens. Home exposure group 2 had a higher than normal ratio, suggesting that they used more minor than major tokens, rendering their language semantically "empty" (Crystal, 1982). This confirms subjective impressions of some of the language samples, obtained from Group 2 subjects.

The fact that the minor:major token ratio increases with increased exposure to English at home suggests that, although subjects become more proficient, they do not necessarily use an optimal balance between content and function words, which may reflect difficulty with the acquisition of expressive vocabulary.

1.2. L.A.R.S.P. Measures

The mean scores attained by each home exposure group on each set of L.A.R.S.P.measures are displayed in Appendix 23. Home exposure groups differed markedly on several, but not all L.A.R.S.P. measures.

1.2.(a) Clause Structure

With regard to the clause structure component of English syntax, children whose parents interact with them in English, use more complex sentences, as well as a wider range of clause structure types than children whose parents do not speak English to them.

Home exposure group 2 used fewer stage II clause structures and more stage III, IV and V structures than home exposure group 1. They also used more of each type of stage V structure, and considerably more sub-ordinate clauses.

1.2.(b) Phrase Structures (other)

There were no major differences between home exposure groups in the use of phrase structures at the various stages of the L.A.R.S.P., although group 2 used more phrase structure types.

1.2.(c) Verb Phrases

The use of the various verb phrase components was similar for the two home exposure groups. The verb phrase components VV, Vpart, auxm, and negV were not used frequently, while other auxiliaries (auxo) and copulas were used often. Group 2 used fewer copulas than Group 1 but more auxiliaries. This may be explained by the fact that Group 2 subjects, as a result of their increased proficiency, were expanding the verb phrase more by incorporating auxiliaries. The copula can be used without expanding the verb phrase since it is, itself, a verb. Group 2 also used more modal auxiliaries (6,14%) than Group 1 (0,25%), as well as more verb phrase types.

1.2.(d) Expansion Ratio

The expansion ratio increased with exposure to English at home, since Group 2's ratio (1,06) was higher than Group 1's ratio (0,62). Increased exposure to English thus leads to increased expansion of clause structures, and thus further development of the syntactic system.

1.2.(e) Word Structure

Home exposure to English did not seem to affect the use of particular word structures. Both home exposure groups used similar percentages of each word structure. Home exposure Group 2 did however, use more contraction of the auxiliary, which was probably due to their increased use of the auxiliary. They also used more third person singular agreement (3s). The use of both these word structures reflects increased proficiency in English. The most frequently occurring word structure in the samples of both home exposure groups was the present progressive word ending "-ing", but Group 2 used this structure less frequently than Group 1, possibly because they used more word structure types, on average, than Group 1.

The fact that there does not seem to be significant development in the use of morphological endings with increased exposure to English at home, may confirm the premise that the acquisition of morphology in a second language appears relatively late in the developmental sequence (Ellis, 1985), since it is one of the most language-specific features.

1.2.(f) Errors

Home exposure group 2 made considerably fewer errors than home exposure group 1 on determiners and prepositions.

Concord, pronoun, and auxiliary errors occurred with approximately the same frequency in both groups, although percentage occurrence of these errors was low, in comparison to errors on determiners and prepositions. The reduction in determiner and preposition errors, is important, because it suggests that, despite the fact that the English spoken in the homes of the subjects may have contained errors, it did not prevent the children from developing correct forms.

The fact that the mean percentage occurrence of the other error categories is the same for both home exposure groups, suggests that these categories may be particularly resistant to change, or may occur frequently in the input provided by the parents at home. The pronoun system of English, is for example, particularly difficult for speakers of the indigenous languages. The contrasts expressed by pronouns in English are not expressed by separate lexemes in these languages, where pronominal contrasts are expressed as part of the morphological structure of words (Suzman, 1992).

1.2.(g) Summary Data

Home exposure to English results in advanced proficiency, as seen in the production of longer sentences, more sentences per turn, more spontaneous utterances than responses, and more normal than abnormal responses.

1.3. Summary of Home Exposure Group Comparison

Generally, the home exposure groups differed on most measures of proficiency, confirming that children who are exposed to English at home are more proficient than children who are not.

Those measures reflecting no real differences between the home exposure groups, particularly the phrase and word structures on the L.A.R.S.P., suggest the possibility that sampling limitations prevented the use of some of these structures, in that the sampling context did not allow sufficient opportunities for the structures to be used.

It is not remarkable that exposure to English at home should result in increased proficiency, since one would expect that a greater quantity of natural input would lead to an increase in the rate of SLA.

However, despite the fact that none of the parents were native speakers of English, their natural, context embedded, child-directed talk had a positive effect on their children's acquisition of English. It is also possible that by speaking to their children in English, the parents convey a positive attitude to the language, and thus increase the children's motivation to learn it (Gardner and Lambert, 1959).

The significant differences between the home exposure groups necessitated the inclusion of equal numbers of subjects from each home exposure group in the intervention and control groups.

2. Length of Attendance at an English Pre-School

It is hypothesized that the length of attendance at an English-medium pre-school will be positively related to an increase in proficiency. The three school exposure groups were therefore compared to each other on all measures. For reasons discussed in the methodology, a descriptive approach was adopted.

2.1. Comprehension, Vocabulary, and P.R.I.S.M.-L Measures

The mean scores attained by each school exposure group on each of the above measures are displayed in Table 5.2.

TABLE 5.2. SCHOOL EXPOSURE GROUP MEANS ON COMPREHENSION, VOCABULARY AND P.R.I.S.M. MEASURES

	School Exposure Group 1 (n=12)	School Exposure Group 2 (n=15)	School Exposure Group 3 (n=3)
Comprehension (%)	56,68	66,83	78,27
Receptive Vocab (%)	51,42	63,11	73,68
Expressive Vocab (%)	38,01	54,31	70,61
Number of Minor Types	22,42	31,40	35,00
Number of Major Types	32,92	46,53	55,67
Minor TTR	0,32 *(0,21)	0,23	0,21
Major TTR	0,62 *(0,51)	0,59	0,57
Number of Fields	13,5	17,66	22,00
Number of Sub-fields	21,17	30,00	35,33
Minor/Major Token Ratio	1,29	1,73	1,74

[*Corrected TTR's excluding Subjects 1,2, 12, 21 and 23, whose TTR's were inflated due to limited output].

As hypothesized, there are consistent and substantial increases in most scores, reflecting increased proficiency across the three school exposure groups. The major and minor TTR's are once again more or less the same across groups, although there is a small increase in the major TTR between Group 1 and 2.

The minor:major token ratio is virtually the same for Groups 2 and 3, having increased substantially from Group 1 to 2.

On some measures, specifically, the number of minor types, and the number of semantic sub-fields, the differences between Groups 2 and 3 are not as large as the differences between Groups 1 and 2, suggesting that less development occurred once the length of attendance at school exceeded a year.

2.2. L.A.R.S.P. Measures

School exposure group means on the L.A.R.S.P. measures are displayed in Appendix 24.

Most L.A.R.S.P. measures confirm that syntactic proficiency in English improves as the length of attendance at an English pre-school increases.

This general trend was reflected in the length and complexity of clause structures, the expansion ratio, mean sentence length,

mean number of sentences per turn, the spontaneous:response ratio, and the normal:abnormal response ratio. There was also an increase in the number of clause, phrase (verb and other), and word structure types used, across the three school exposure groups.

School exposure group 3 made fewer determiner and preposition errors than groups 1 and 2, suggesting that these error categories begin to resolve after two years of schooling in English.

Pronoun and auxiliary errors on the other hand, occurred more frequently in groups 2 and 3 possibly because these two groups produced more auxiliaries and pronouns, increasing the number of opportunities for errors to be made.

School exposure groups did not differ markedly in the use of the different verb phrase components. Auxiliaries (auxo) and copulas were again used most often by all groups. Since this trend was also observed in the home exposure group comparison, it is possible that the use of the other verb phrase types was restricted by the nature of the sampling context.

There were however, a number of L.A.R.S.P. measures that revealed a difference between home and school exposure to English. With respect to stage V clause structures, the three school exposure groups used predominantly co-ordinate clauses, and very few post-modifying clauses. There was very little difference between the three groups in the use of sub-ordinate clauses, and Group 3,

used less of this type of Stage V structure than Group 2. This suggests that the exposure to English through school attendance did not result in the acquisition of sub-ordinate clauses.

In contrast, the home exposure groups did differ substantially in the use of sub-ordinate clauses. The same applied to the use of modal auxiliaries (auxm). While there was almost no difference between school exposure groups in the use of this verb phrase component, home exposure group 2 used more modal auxiliaries than home exposure group 1.

It is possible that the simplified input provided by the teachers, did not facilitate the acquisition of these structures. The fact that simplified registers have been found to contain more co-ordination than sub-ordination (see Table 2.1., chapter 2), would support this conclusion. The parents, on the other hand, engaged in more one to one conversation with their children, and may have used sub-ordinate clauses and modal auxiliaries when they felt that their children would understand them.

There were also structures on which school exposure groups differed, while home exposure groups did not. These included: phrase structures (other) where school exposure groups 2 and 3 used more stage IV structures and group 3 used more stage VI structures; the verb phrase components VV and Vpart, where school exposure group 2 used more of these structures than group 1; and the word structures -ed, en, 3s, gen, and 'aux, where there were

consistent increases across the three school exposure groups.

This may also be due to differences in input. It is possible that the phrase and word structure components of a language are best learned through native speaker input, since these aspects are more specific to particular languages, and may not occur as frequently in the interlanguage of L2 speakers.

The fact that the home and school exposure variables were examined cross-sectionally using different groups of subjects rather than longitudinally using the same subjects, may be seen as a limitation in the interpretation of these results.

However, it does seem that the natural exposure to English provided by the parents at home, and by peers and teachers at school, resulted in a substantial amount of SLA by the pre-schoolers in this study.

One consistent finding in both home and school exposure comparisons, is that there was an increase in the number of clause, phrase and word structure types used as exposure to English increased. This confirms that proficiency is related to the range of language structures used, as much as it is related to the complexity of structures used (Ellis, 1985).

The fact that school exposure groups differed in proficiency necessitated the inclusion of equal numbers of subjects from each school exposure group in the intervention and control groups.

3. Comparison between Comprehension and Production of English
In the preceding analyses of the home and school exposure variables, a fairly consistent pattern emerges, with respect to comprehension and production of English.

The lowest mean score attained by all groups was on the expressive vocabulary measure with the comprehension and receptive vocabulary scores being much higher and comparable to each other.

The "comprehension precedes production" condition (Spolsky, 1989) thus seems to apply in second language acquisition, as it does in L1 acquisition.

The equivalence of the receptive vocabulary and the comprehension test scores was to be expected, since both tests measured a similar language domain (i.e. understanding of English).

In the more proficient groups (i.e. home exposure group 2 and school exposure group 3), the differences between the receptive and expressive vocabulary test scores were not as pronounced as in the less proficient groups (home exposure group 1 and school exposure group 1). This suggests that the difference between comprehension and production skills becomes less marked as proficiency increases.

B. THE EFFECTS OF INTERVENTION

COMPARISON BETWEEN INTERVENTION AND CONTROL GROUPS

1. Comprehension and Vocabulary Test Results

The mean pre- and post-intervention scores attained by Groups A, B and C as well as the differences between the pre- and post-intervention means, appear in Table 5.3.

TABLE 5.3. MEAN PRE- AND POST-INTERVENTION COMPREHENSION AND VOCABULARY SCORES AND DIFFERENCES BETWEEN THE MEANS

		Group A	Group B	Group C
Comprehension (%)	Pre	64,54	63,89	63,33
	Post	81,96	73,03	69,24
	Diff	17,43	9,14	5,91
Receptive Vocabulary (%)	Pre	57,76	64,87	55,85
	Post	68,29	68,15	60,32
	Diff	10,53	3,28	4,47
Expressive (%) Vocabulary	Pre	45,00	55,54	47,73
	Post	66,71	59,08	47,73
	Diff	21,71	3,54	0

The results of the statistical tests for significant differences between groups on each measure are presented briefly below, and discussed further in section 3.

1.1. Comprehension Scores

The differences between the pre- and post-intervention group means on the comprehension test (i.e. the Modified T.A.C.L.-R (Carrow, 1988) are depicted graphically in Figure 5.1.

The analysis of Variance (ANOVA) revealed significant differences between groups ($F = 7.03$, $pr > F = 0,0035$) and Duncan's Multiple Range Test located the significant differences between Groups A and B, and A and C. The difference between Groups B and C was not significant.

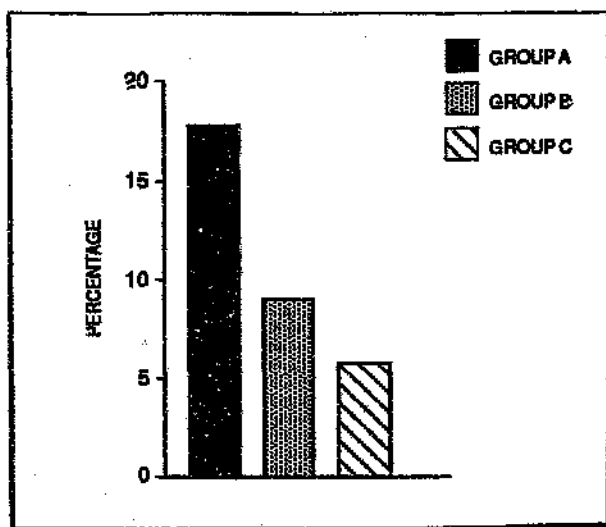


Figure 5.1. Differences between Pre- and Post-Intervention Group Means on the Comprehension Test.

1.2. Receptive Vocabulary

The differences between the pre- and post-intervention group means on the receptive vocabulary test are depicted graphically in Figure 5.2.

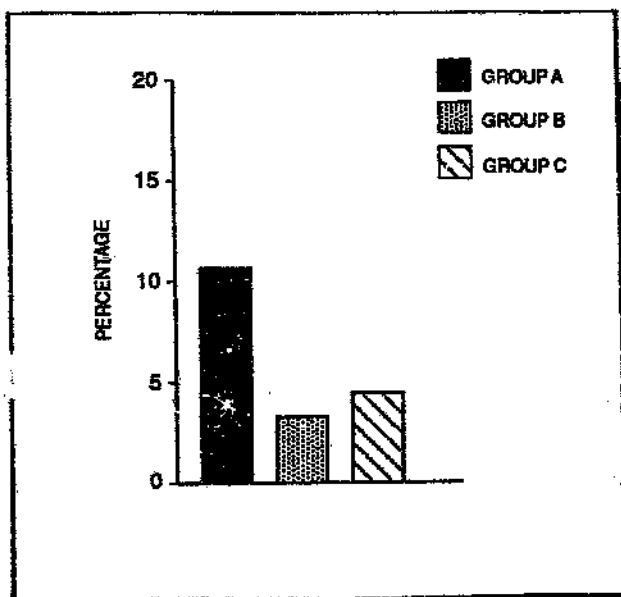


Figure 5.2. Differences between Pre- and Post-Intervention Group Means on the Receptive Vocabulary Test

The ANOVA revealed significant differences between groups ($F = 3,36$; $pr > F = 0,0499$) Duncan's Multiple Range Test located the significant difference between Groups A and B. The differences between groups A and C, and B and C were not statistically significant.

1.3. Expressive Vocabulary

The differences between the pre- and post-intervention group means on the expressive vocabulary test are depicted graphically in Figure 5.3.

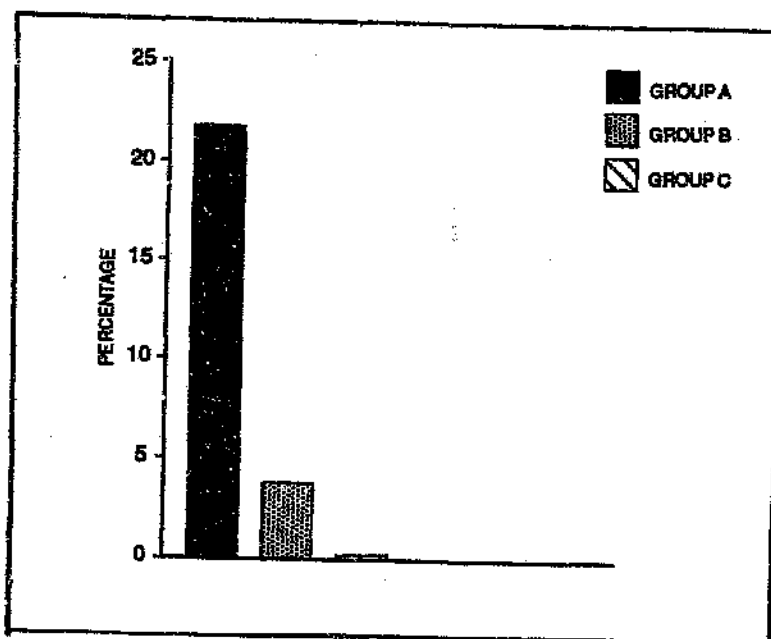


Figure 5.3. Differences between Pre- and Post-Intervention Group Means on the Expressive Vocabulary Test.

The ANOVA revealed significant differences ($F = 8,29$; $pr > F = 0,0016$) and Duncan's Multiple Range Test located the significant differences between Groups A and B, and A and C. The difference between Groups B and C was not significant.

2. P.R.I.S.M.-L Results

The mean pre- and post-intervention scores as well as the differences between the means for each group are contained in Table 5.4.

TABLE 5.4. MEAN PRE- AND POST-INTERVENTION P.R.I.S.M.-L SCORES AND THE DIFFERENCES BETWEEN THE MEANS

		Group A	Group B	Group C
Total Number of Minor types	Pre	26,00	27,3	31,20
	Post	37,30	29,7	27,2
	Diff	11,30	2,40	-4,0
Total number of Major types	Pre	38,400	39,6	48,00
	Post	55,100	45,1	39,90
	Diff	16,70	5,50	-8,10
Minor TTR	Pre	0,37	0,28	0,22
	Post	0,38	0,27	0,34
	Diff	0,06	-0,01	0,12
Major TTR	Pre	0,58	0,59	0,63
	Post	0,73	0,63	0,63
	Diff	0,14	0,04	0,00
Fields	Pre	15,20	16,3	17,8
	Post	21,20	17,9	14,8
	Diff	6,00	1,6	-3,0
Sub-fields	Pre	26,30	26,20	28,5
	Post	36,70	30,60	25,5
	Diff	10,4	4,4	-3,00
Minor/Major Token Ratio	Pre	1,61	1,49	1,58
	Post	1,43	1,62	1,47
	Diff	-0,18	0,13	-0,11

The results of the statistical tests for significant differences between the pre- and post-intervention group means on each P.R.I.S.M. measure are presented below.

2.1. Total Number of Minor Types

The differences between the pre- and post-intervention means for each group are depicted graphically in Figure 5.4.

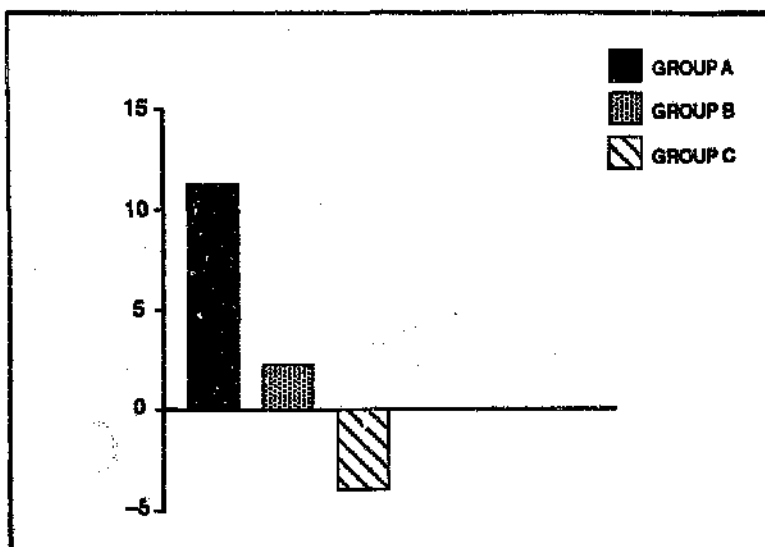


Figure 5.4. Differences between Pre- and Post-Intervention Group Means for Number of Minor Types.

The ANOVA revealed significant differences ($F = 6.67$; $pr > F = 0.0044$) and Duncan's Multiple Range Test located the significant differences between Groups A and B, and Groups A and C. The difference between Groups B and C was not statistically significant.

2.2. Total Number of Major Types

The differences between the pre- and post-intervention group means on the number of major types are depicted graphically in Figure 5.5.

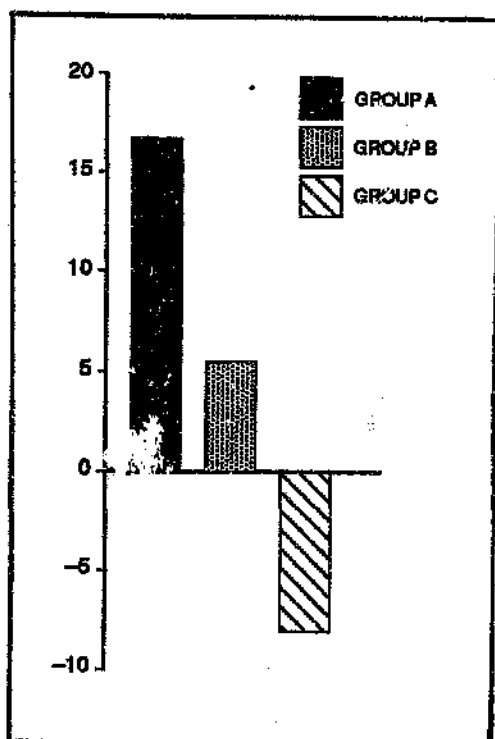


Figure 5.5. Differences Between Pre- and Post-Intervention Group Means on Total Number of Major Types.

The ANOVA yielded significant results ($F = 8.01$; $Pr > F = 0.0019$) and Duncan's Multiple Range Test located the significant differences between Groups A and C, and Groups B and C. The difference between Groups A and B was not statistically significant.

2.3. Minor Type-Token-Ratio

The differences between the pre and post intervention group means on the minor type-token-ratio are depicted graphically in Figure 5.6.

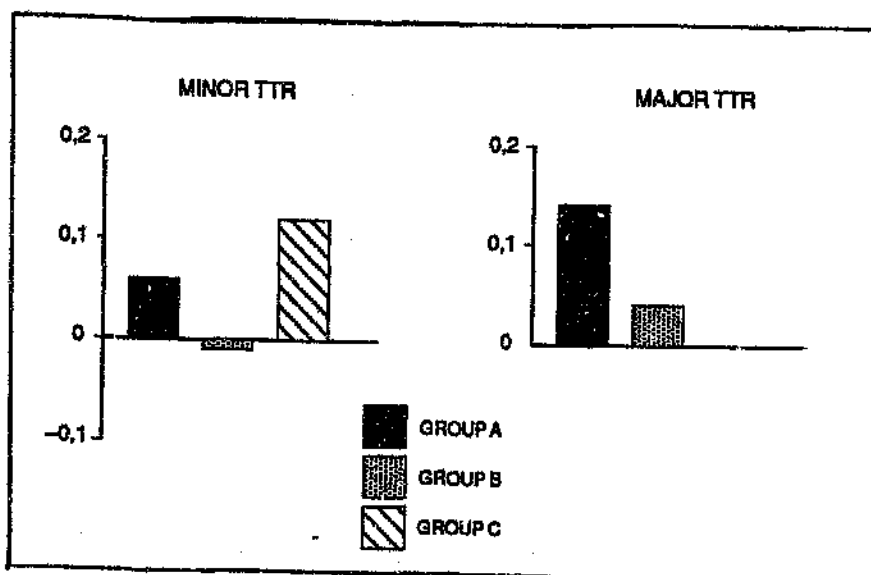


Figure 5.6. Differences between Pre- and Post-Intervention Group Means on the Minor and Major Type-Token-Ratios.

The ANOVA yielded non-significant results between the three groups ($F = 2,93$; $Pr > F = 0,0704$).

2.4. Major Type-Token-Ratio

The differences between the pre- and post-intervention group means on the major TTR measure are depicted graphically in Figure 5.6. The ANOVA yielded non-significant results between the three groups ($F = 1,14$; $Pr > F = 0,3334$).

2.5. Number of Semantic Fields

The differences between the mean number of semantic fields used in the pre- and post-intervention samples by each group are displayed graphically in Figure 5.7.

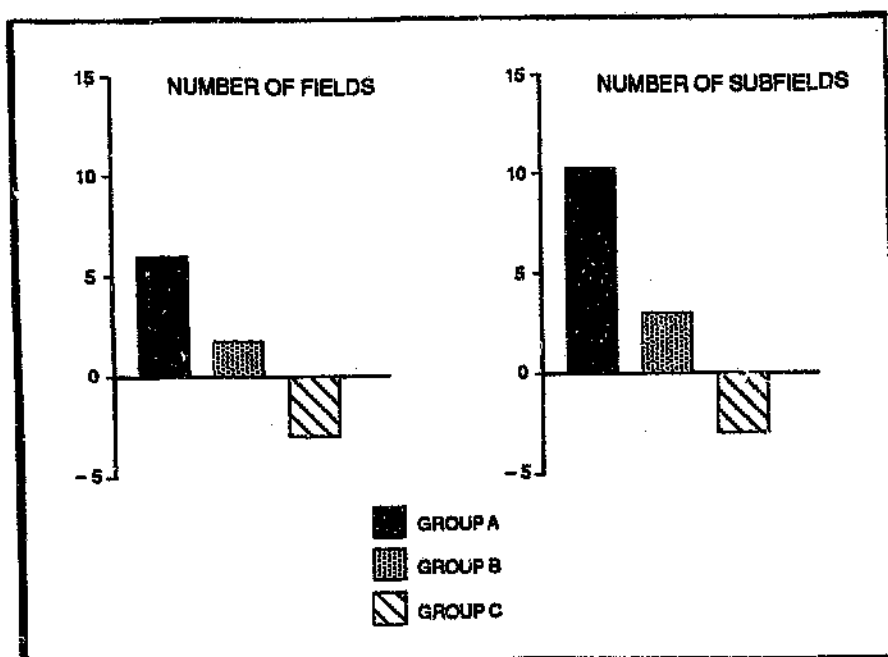


Figure 5.7. Differences between the Pre- and Post-Invention Group Means on the Number of Semantic Fields and Sub-fields.

The ANOVA yielded highly significant results ($F = 11,58$; $Pr > = 0,0002$) and Duncan's Multiple Range Test located the significant differences between Groups A and B, A and C, and B and C.

2.6. Number of Sub-fields

The differences between the pre- and post-intervention group means, on the number of sub-fields used in the samples are displayed graphically, in Figure 5.7. The ANOVA yielded significant results ($F_c = 6,91$; $Pr > F = 0,0038$) and Duncan's Multiple Range Test located the significant difference between Groups A and C. The differences between Groups A and B, and B and C were not statistically significant.

2.7. Minor:Major Token-Ratio

The differences between the pre- and post-intervention group means on the minor:major token ratio measure are depicted graphically in Figure 5.8.

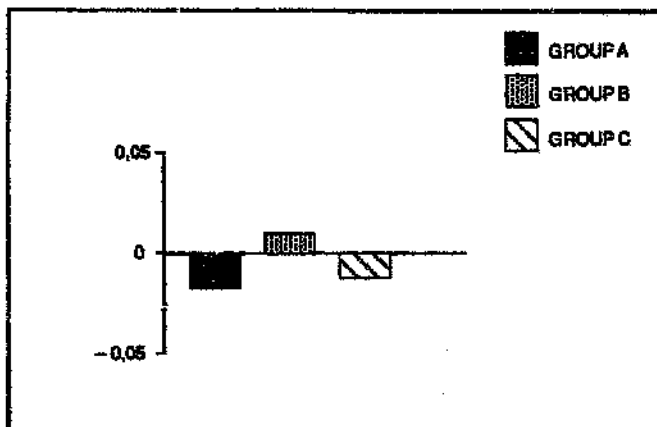


Figure 5.8. Differences between Pre- and Post-Intervention Group Means on the Minor:Major Token Ratio.

The ANOVA yielded non-significant differences between the three groups on this measure ($F = 0,98$; $Pr > F = 0,3881$).

3. Summary and Discussion

The bar graphs in Figures 5.1 to 5.8 show clearly that group A, who received language intervention from the speech-language therapist, improved more than the other two groups on all measures.

Group B, who had additional input in English from the teacher, improved more than Group C subjects who received no additional input in English. However, not all the results were statistically significant.

Table 5.5 summarizes the results of the statistical tests for significant differences between groups A, B and C on the comparison between the pre- and post-intervention means, for the comprehension, vocabulary and P.R.I.S.M.-L measure.

TABLE 5.5. SUMMARY OF THE STATISTICAL ANALYSIS OF RESULTS

Measure	Comparison Between Groups		
	A and B	A and C	B and C
Comprehension	*	*	-
Receptive Vocabulary	*	-	-
Expressive Vocabulary	*	*	-
Minor Types	*	*	-
Major Types	-	*	*
Minor TTR	-	-	-
Major TTR	-	-	-
Fields	*	*	*
Sub-fields	-	*	-
Minor/Major token-ratio	-	-	-

KEY:

- * Statistically significant results
- Non-significant results

The differences between groups on the changed minor and major type-token-ratio's and the minor:major token-ratio were not statistically significant. The intervention with Group A was therefore not effective in improving these measures, and the additional input given to Group B also had no effect on the type-token-ratio's and the minor:major token-ratio.

However, the minor and major TTR's were not found to be reliable indices of proficiency in the analysis of the pre-intervention scores. The minor TTR, in particular, seemed to be limited by the sampling context. The graphs in Figure 5.6 show that Group C made the most progress with respect to the minor TTR, but this only occurred because they used fewer minor types in the post-intervention samples (See Figure 5.4).

The differences between the pre- and post-intervention means on the minor TTR measure were negligible in all groups. It seemed that the same sampling constraints were operating in the post-intervention sampling context.

Although Group A's major TTR increased more than the other two groups (see Figure 5.6) the improvement was not statistically significant. However, the mean major TTR for Group A in the post-intervention assessment was 0,73, which exceeded the major TTR of 0,69 attained by an age matched group of L1 subjects in the same sampling context (Morris, 1992). The mean post-intervention major TTR for both Group B and C was 0,63, which was still below the L1 group's mean. Thus, despite the lack of statistical significance, Group A made considerably more gains than Groups B and C with respect to the major TTR.

The absence of statistically significant results on the minor:major token ratio were of little consequence, since the means for Groups A, B and C were close to the optimal range of 1,2 to 1,5 (Crystal, 1982) in both the pre- and post-intervention analyses. The mean ratio's could therefore not be expected to

change significantly.

3.1. Comparison between Groups A and B

The comparison between Groups A and B was undertaken to establish whether the improved proficiency observed in Group A was due to the intervention provided by the language therapist, and would not have occurred as a result of an increased quantity of input only. If the minor and major TTR's and the minor:major token ratio are disregarded, the summary of results in Table 5.5 shows that Groups A and B differed significantly on five out of the seven remaining measures.

This confirms, for the most part, that the language intervention was more effective in facilitating the acquisition of English than an increased quantity of teacher input.

The fact that statistically significant results were not found, on the number of major types and the number of sub-fields, suggests that Group B acquired a similar number of new vocabulary items and word categories, from their interaction with the teacher. This may have occurred because Groups A and B received similar input with respect to language content, since both the language therapist and the teacher used the fields and sub-fields on the P.R.I.S.M.-L as themes during their sessions with the groups. However, Group A improved significantly more than Group B on the receptive and expressive vocabulary measures. Since these tests covered a wider range of fields and major lexical types than the language sampling context, it could be argued that

Group A still acquired more vocabulary than Group B.

Group A also acquired significantly more semantic fields than Group B, suggesting that they improved more than Group B with respect to the number of broader topics they could converse about, within the sampling context.

3.2. Comparison between Groups A and C

Table 5.5 shows that if the minor and major TTR's and the minor:major token-ratio measures are excluded, Group A improved more than Group C on six out of the remaining seven measures. The language intervention provided by the language-therapist was therefore more effective in facilitating language acquisition than the input provided through peer and teacher interaction in the regular pre-school programme. The only measure on which Group A did not improve significantly more than Group C was the receptive vocabulary test. It would seem that the pre-school environment provides sufficient opportunities for the development of vocabulary comprehension, and that additional input is not required. This conclusion is supported further by the finding that Groups B and C also did not differ significantly in the extent to which they improved on the receptive vocabulary score, in fact Group C did slightly better than group B.

However, the additional input provided by language intervention allows for more rapid acquisition of expressive vocabulary skills. This may be due to the fact that the context created during intervention encourages the children to practise using

newly acquired vocabulary. This supports the output hypothesis proposed by Swain (1985), which states that second language learners need as much practise in using the new language as they need comprehensible input, for successful acquisition to occur.

Group A improved significantly more than Group C on the modified T.A.C.L.-R (Carroll, 1988), implying that the additional input provided by language intervention is more beneficial in facilitating the acquisition of syntactic comprehension. Group A's significant improvement on the comprehension measure confirms Fey's (1986) basic premise, that the focused stimulation of particular language forms, which is used as a technique in language intervention, enhances the development of linguistic comprehension.

Group A also acquired significantly more minor lexeme types than Groups B and C, suggesting that the benefits of intervention, may be extended to expressive syntax.

3.3. Comparison between Groups B and C

Groups B and C differed significantly on only two measures. Group B improved significantly more than Group C on the number of major types and semantic fields on the P.R.I.S.M.-L analysis. On all other measures, Group B did not improve significantly more than Group C, suggesting that the advantages of providing only additional input in English, are limited.

However, Group B improved on the majority of measures, and their progress was encouraging, suggesting that if teachers are provided with direction on how to facilitate language acquisition, they could achieve good results with pre-school children who are acquiring a second language.

Group C, on the other hand, used fewer major and minor types, fields and sub-fields in the post-intervention samples than in those obtained before intervention. Their mean expressive vocabulary score did not change at all. Thus it would seem, that over a twelve week period, there was no development of expressive vocabulary skills in a group of ESL children attending an English pre-school. The relatively slow rate of second language acquisition by young children, described by authors such as Krashen (1982) is thus substantiated by the results attained by Group C.

In addition to the improvement in vocabulary comprehension, Group C also improved on the modified T.A.C.L.-R (Carrow, 1988), confirming, that the advantage of the natural input provided by the pre-school environment is related to comprehension, rather than production of a second language, when measured over a 12 week period.

4. Results of the L.A.R.S.P. analyses

Pre- and post-intervention group means on all the L.A.R.S.P. measures, the differences between the means, and the standard deviations calculated on the difference scores, are recorded in Appendix 25.

Table 5.6. is a summary of the differences between the pre- and post-intervention group means on all the L.A.R.S.P. measures, that were targeted in intervention.

Although the L.A.R.S.P. analysis yielded a great deal of interesting data, the presentation and discussion of results will be limited to the outcome of intervention with respect to targeted structures only.

Group A showed more improvement than groups B and C on a substantial number of the structures targeted during the intervention phase, confirming that the intervention was effective in facilitating the acquisition of many, but not all syntactic structures. Such acquisition would not have occurred as a result of increased input in English, or regular nursery school attendance.

The L.A.R.S.P. measures on which group A improved more than groups B and C are marked with an asterisk (*) on Table 5.6. The targeted structures on which group A did not improve more than groups B and/or C are marked with a minus sign (-).

TABLE 5.6. DIFFERENCES BETWEEN PRE- AND POST-INTERVENTION GROUP MEANS ON L.A.R.S.P. STRUCTURES TARGETED IN INTERVENTION

LARSF MEASURES			GROUP A	GROUP B	GROUP C
Clause Structure:	Stage IV	-	4,9	4,7	2,1
	Stage V:	Sub-ord *	26,2	13,4	1,8
		Post-mod -	1,3	6,3	0,3
Phrase structure					
	Other:	Stage IV *	7,4	3,0	2,2
		Stage V -	0,2	0,3	0,4
		Stage VI *	2,6	0,3	0,6
Verb Phrases:	VV	*	10,1	1,1	2,1
	Vpart	-	1,3	9,1	2,1
	Auxm	*	5,8	-1,3	-1,0
	Neg V	*	2,9	0,4	-1,7
	Complex VP	*	3,4	2,0	4,9
Word Structures:	ing	*	-12,9	-4,2	12,4
	pl	*	12,5	-7,7	-2,5
	-ed	-	4,1	5,7	-3,4
	3s	-	-6,3	2,1	0,7
Expansion Ratio			0,7	0,3	0
Mean Sentence Length			1,4	0,3	0,5
Mean no. of sentences per turn			1,3	0,3	0,04
Spontaneous: Response ratio			0,8	0,3	-0,1
Normal:Abnormal Response ratio			1,6	0,2	-1,2

The differences between the pre- and post-intervention group means on the L.A.R.S.P. measures are presented graphically, in Figures 5.9 to 5.15, to illustrate group A's advantage over the control groups.

These bar graphs also highlight general trends in the acquisition of English by groups B and C, over the twelve week intervention phase.

Each figure refers to a set of L.A.R.S.P. measures, representing the different levels of syntactic analysis.

4.1. Comparison between Groups on Targeted Structures

4.1.(a) Clause Structure

The bar graphs in Figure 5.9 below, illustrate the differences between the pre- and post-intervention clause structure means for the intervention and control groups.

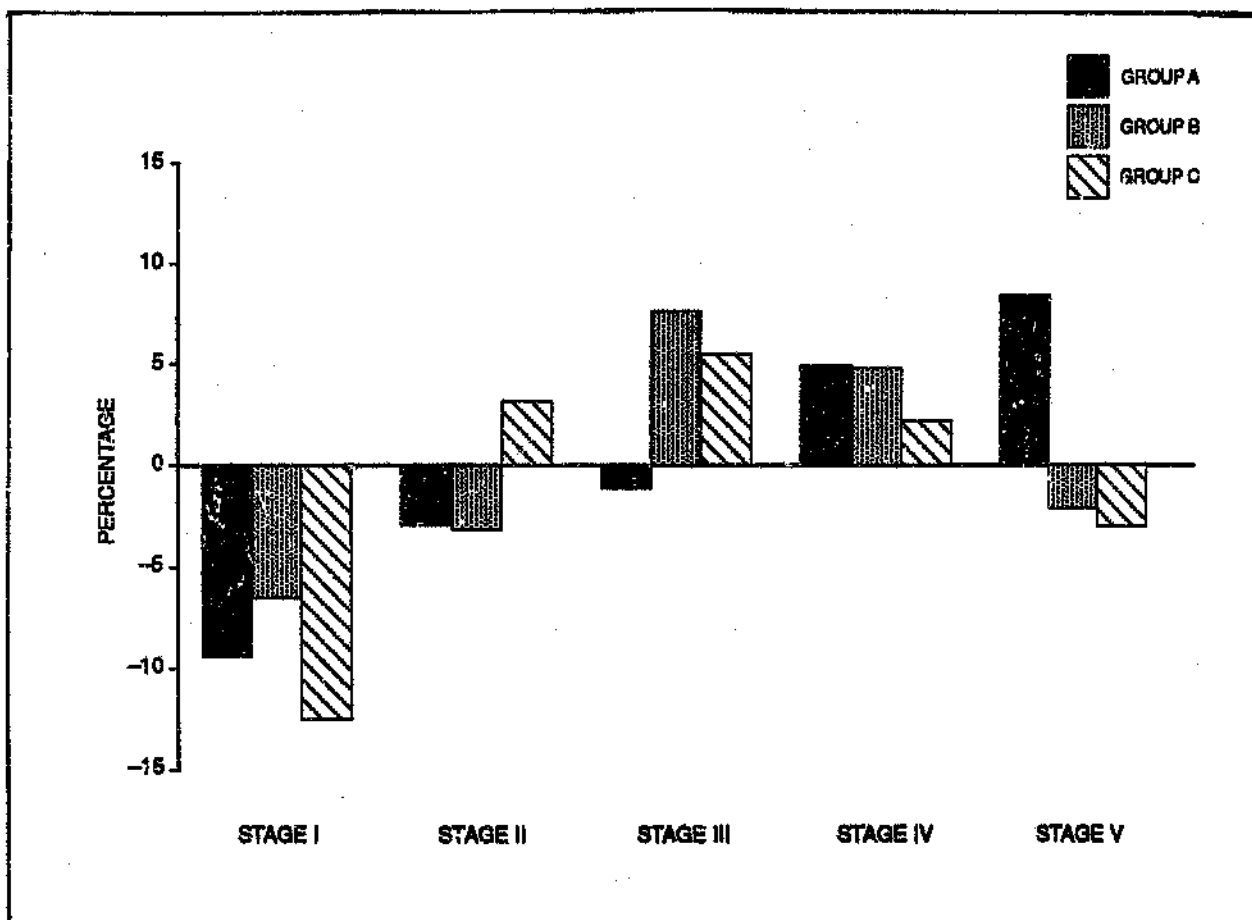


Figure 5.9. Differences between Pre- and Post-Intervention Group Means for Clause Structures at Each L.A.R.S.P. Stage.

All three of the groups increased their use of stage IV structures, with no marked differences between groups. Despite the fact that stage IV structures were targeted in the intervention with group A, they did not increase their use of these structures more than groups B and C.

The relatively small increase on percentage use of stage IV structures that Group A achieved (4,93%), cannot be attributed unequivocally to the intervention.

However, group A increased their use of stage V structures substantially more than groups B and C, who produced slightly fewer stage V structures. It also seems that group A's increased use of stage V structures can be attributed to the intervention, since they used fewer co-ordinate clauses (-13,46%) and more subordinate clauses, (26,17%) which were the structures targeted during the intervention (See Figure 5.10). Group A differs markedly from groups B and C on the changed use of co-ordinate and sub-ordinate clauses. The groups do not differ greatly in their changed use of post-modification, suggesting that the intervention aimed at facilitating the acquisition of this sentence type was not effective, within the 12 week period.

The bar graphs in Figure 5.10 illustrate the difference between the pre- and post-intervention means attained by each group on each type of Stage V structure.

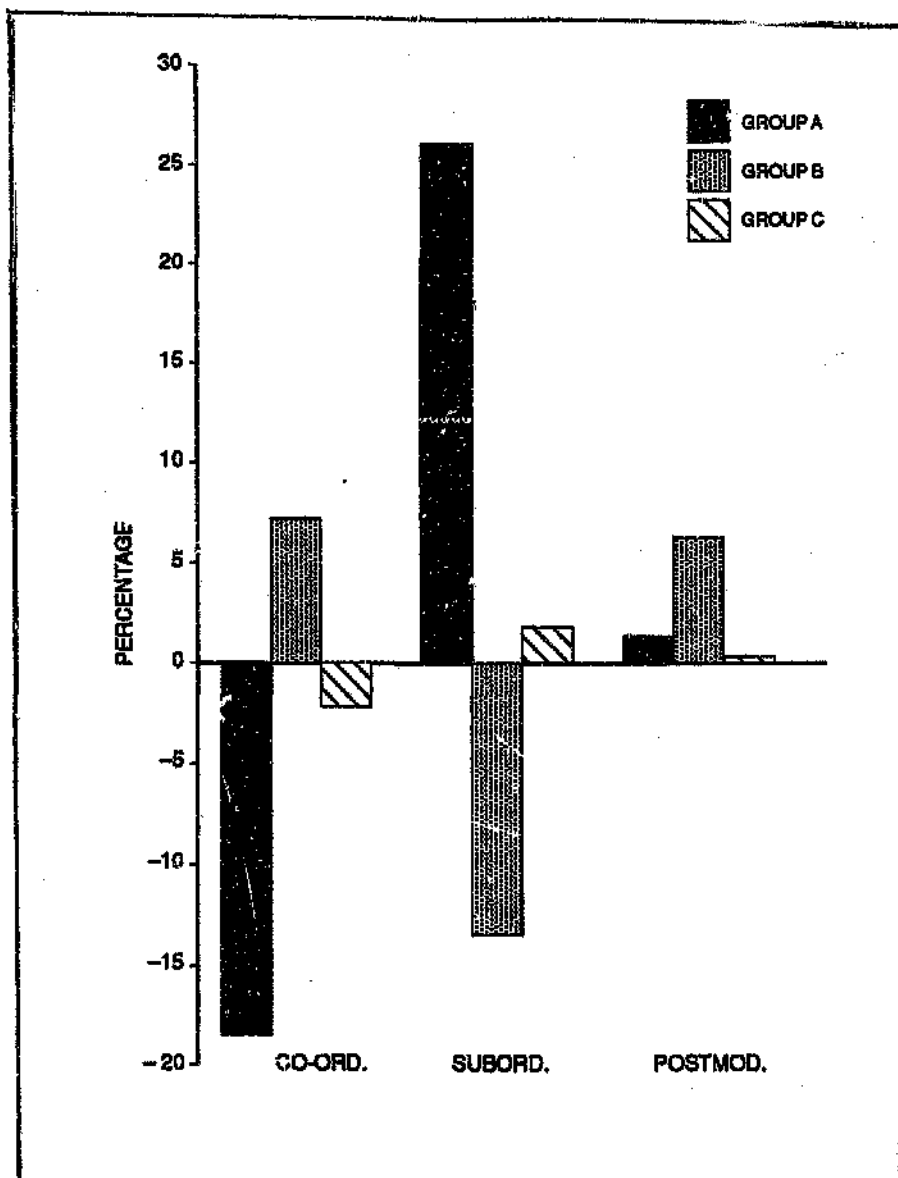


Figure 5.10. Differences between Pre- and Post-Intervention Group Means on Stage V Clause Structure Types.

4.1.(b) Phrase Structure (other)

The differences between the pre- and post-intervention group means on the phrase structure (other) measures at each L.A.R.S.P. stage are illustrated in Figure 5.11.

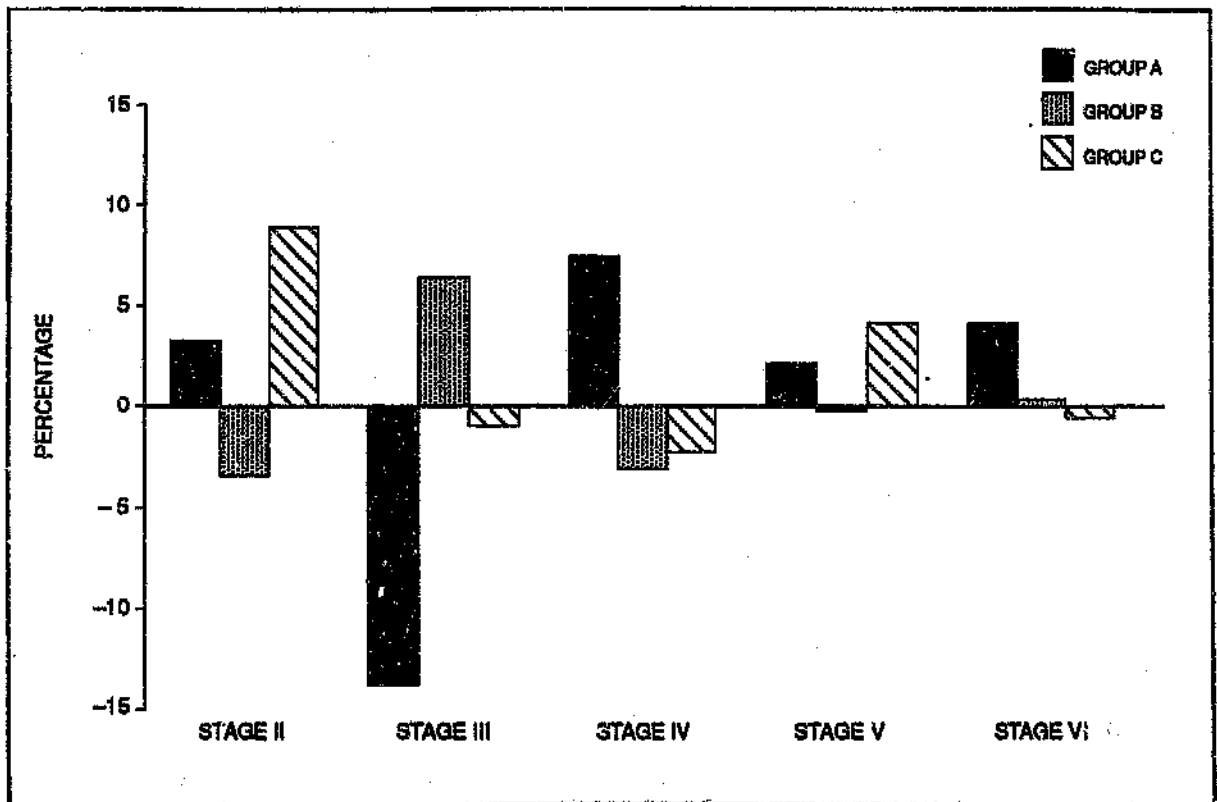


Figure 5.11. Differences between Pre- and Post-Intervention Group Means on Phrase Structure (other) Measures at Each L.A.R.S.P. Stage.

It would seem that group A used more stage IV and VI structures as a result of the intervention, since the differences between groups are substantial at these two stages. Groups B and C used fewer stage IV structures, while group C used fewer stage VI structures.

The intervention was not effective in facilitating the acquisition of post-modifying phrases (stage V), since the differences between groups are not marked.

If this result is considered together with the fact that the intervention also had little effect on the acquisition of post-modifying clauses it is possible that post-modification is a particularly difficult structure for pre-school ESL learners.

Suzman (1992) postulates that the difficulty with post-modification is due to the fact that prepositions and relative pronouns are used to introduce these phrases or clauses, and because English prepositions and pronouns express a variety of contrasts that are not found in African languages, post-modification is not used by speakers of these languages.

The differences between groups on the changed use of stage VI structures were not large, but group A appeared to benefit to some extent from the intervention aimed at teaching these structures, because they increased their use of stage VI phrase structures by 2,63%. Groups B and C showed very small changes in their use of stage VI structures (0,3 and 0,6 percent respectively).

4.1.(c). Verb Phrases

The bar graphs in Figure 5.12 represent the differences between the pre- and post-intervention group means for each verb phrase component.

The intervention goal with respect to the verb phrase, was to

reduce the over-use of the "is...ing" (auxo) construction by increasing the use of all other verb phrase types, except the copula, which was well represented, in the pre-intervention samples.

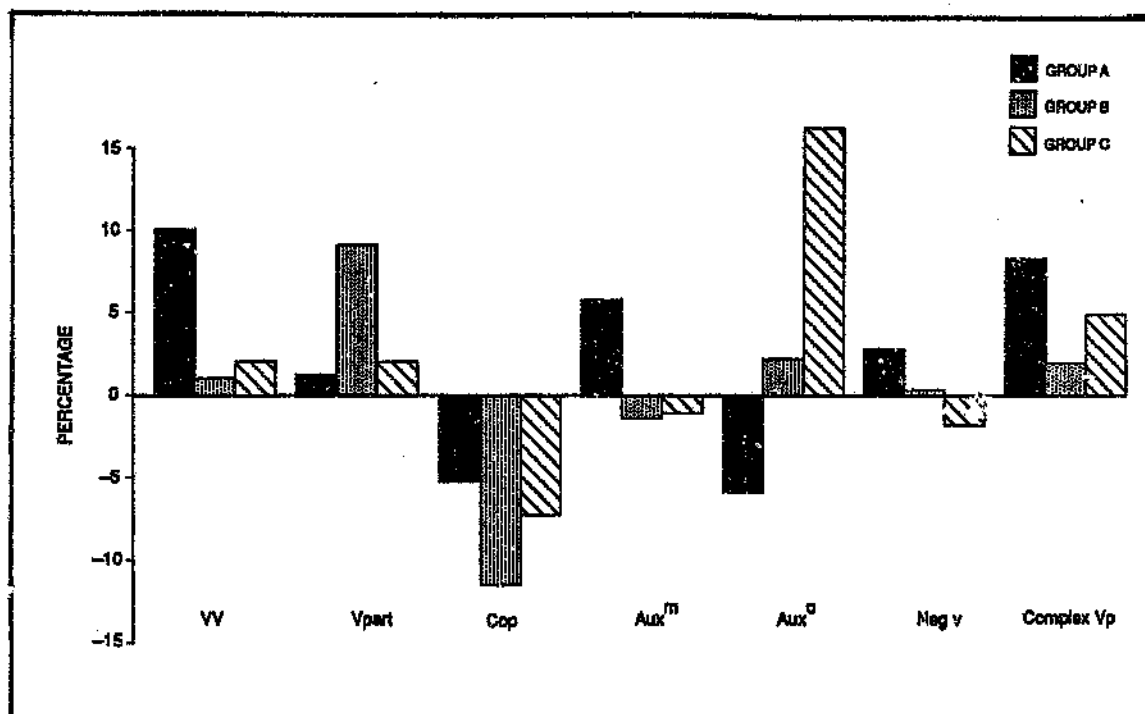


Figure 5.12 Differences between Pre- and Post- Intervention Group Means on Verb Phrase Components

It would appear from Figure 5.12 that with the exception of the Vpart structure, the intervention was effective in facilitating the acquisition of all the targeted verb phrase components (VV, Auxm, NegV and Complex VP).

Group A used fewer copulas, and other auxiliaries, and increased their use of the other verb phrase structures substantially more than groups B and C.

Despite the language therapist's attempt to increase the use of the Vpart structure, group A did not show significant gains over the other two groups in the use of this structure. Group B, used more of this structure after the intervention phase, than group A and C. However, the standard deviation on the changed use of the Vpart structure, is much higher for group B than for the other two groups, suggesting that the difference was effected by one or two subjects who used considerably more verb + particle structures. This lack of uniformity in the standard deviations across groups, suggests that the differences between groups may not be significant.

4.1.(d) Expansion Ratio

The expansion ratio represents the proportion of stage II and III clause structures that were expanded.

Group A seemed to have benefitted from the intervention with respect to expanding the elements of clause structure, in that their expansion ratio increased by 0,65, which was more than the increase achieved by group B (0,33). Group C's expansion ratio showed very little change (-0,03).

Table 5.7 shows the number of subjects in each group, who increased their expansion ratio from the pre- to the post-intervention assessment.

TABLE 5.7 NUMBER OF SUBJECTS IN EACH GROUP WHO INCREASED THEIR EXPANSION RATIO

Group	Number of Subjects
A	9
B	6
C	5

The majority of Group A subjects increased their ratio while fewer group B and C subjects had higher post-intervention ratio's.

This confirms group A's advantage with regard to the expansion ratio.

4.1.(e) Word Structure

The differences between the pre- and post-intervention group means on the word structures that were specifically targeted in intervention are represented graphically in Figure 5.13.

4.1.(e)(i) -ing

The present progressive verb ending "-ing", constituted the largest percentage (39,44%) of the total number of word structures in the pre-intervention samples. In comparison to an age-matched group of monolingual subjects whose language was sampled in exactly the same contexts as the subjects of this study, (Preston, 1992), the "ing" word ending was over-used by 12,88%. The intervention with group A, aimed to facilitate the acquisition of verb phrase structures other than the "is.....ing" construction, seemed to have been successful, since group A's use of this structure decreased considerably more than that of groups B and C.

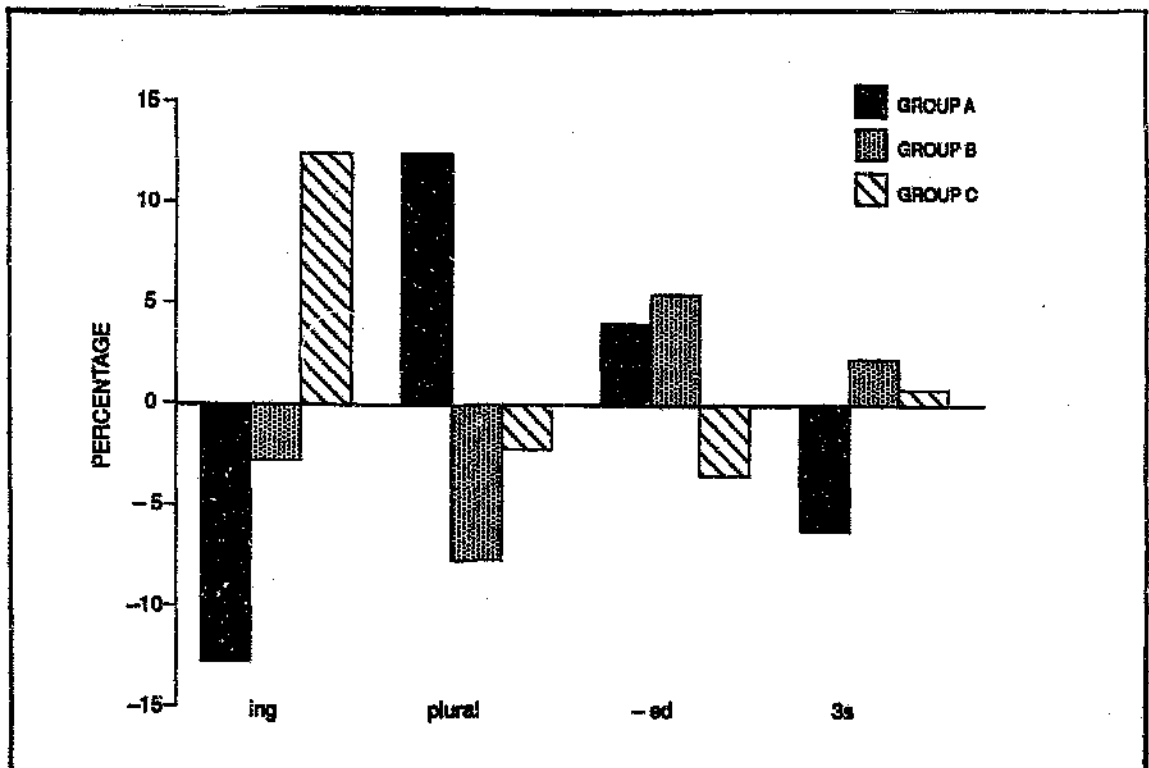


Figure 5.13. Differences between Pre- and Post-Intervention Group Means on Targeted Word Structures.

4.1.(e)(ii) Plurals

It is clear from Figure 5.13 that the intervention was effective in facilitating group A's use of plurals. Group A used 12,5% more plurals while groups B and C used fewer plurals in the post-intervention language samples.

4.1.(e)(iii) Past Tense Morpheme -ed

Group A's increased use of the past tense verb marker -ed cannot be attributed to the intervention only, since the difference between group A and B on the increased use of this structure was very small.

4.1.(e)(iv) Third Person Singular Agreement Morpheme (3s)

Although this morpheme was specifically targeted in intervention,

group A used it less after intervention than before. This may be due to group A's use of more verb phrase types, which prevented them from simultaneously applying the rule regarding third person singular agreement.

4.1.(f) L.A.R.S.P. Summary Measures

The intervention with group A had a marked effect on their mean sentence length, mean number of sentences per turn, spontaneous: response ratio, and normal:abnormal response ratio.

This is clearly evident from the bar graphs in Figure 5.14, depicting the differences between the pre- and post-intervention group means on each of these measures.

Group A improved more than the other two groups on all the summary measures. The mean sentence length (MSL) was very similar across groups in the pre-intervention samples, and all groups increased their MSL, but because group A used more stage V structures in the post-intervention samples, their MSL increased more than that of groups B and C. The mean number of sentences per turn, as well as the ratio of spontaneous utterances to responses, are measures of the ability to converse spontaneously, by taking an active role in the interaction.

Both group A and B improved on these measures, suggesting that they may have been more confident in communicating in English, as a result of their increased exposure to English.

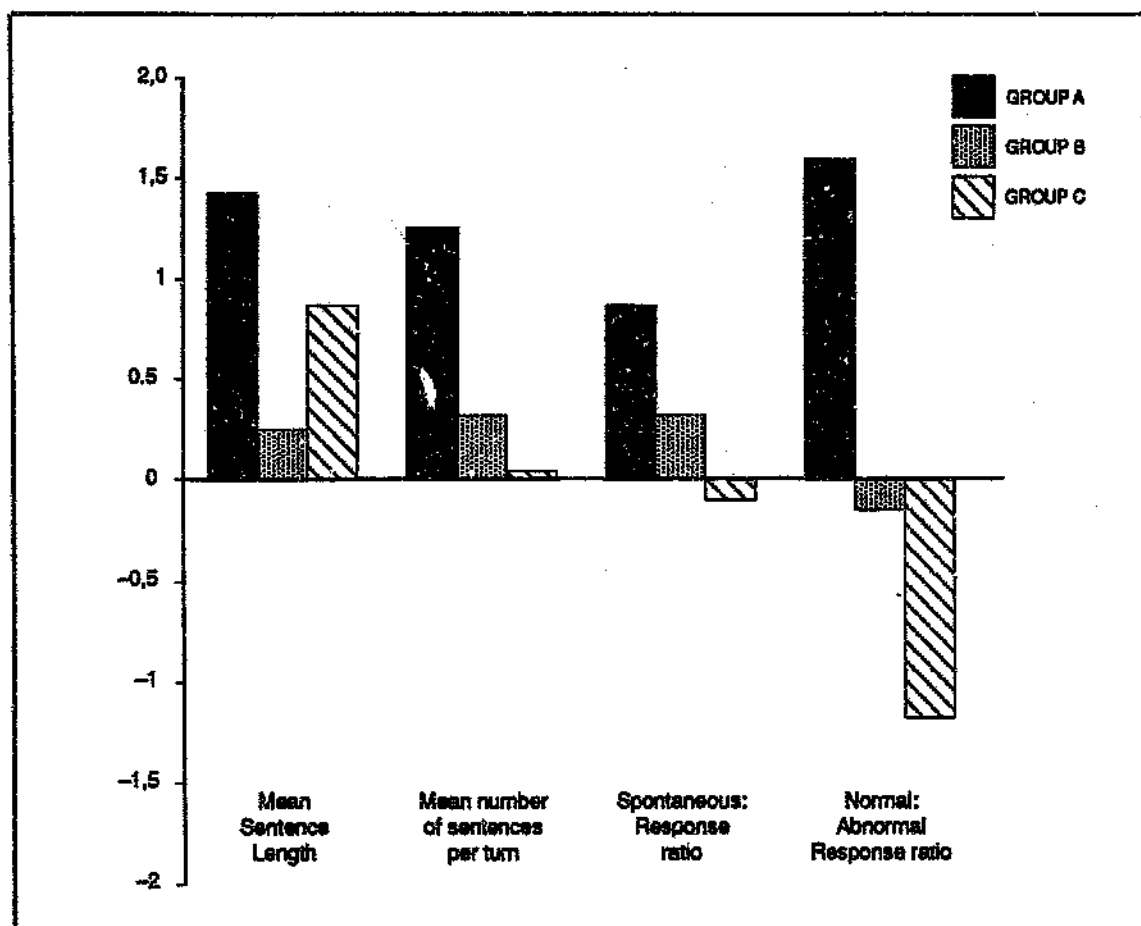


Figure 5.14. Differences between Pre- and Post-Intervention Group Means on L.A.R.S.P. Summary Measures.

4.1.(g) Number of Clause, Phrase and Word Structure Types

Table 5.8 shows the difference between the pre- and post-intervention group means with respect to the number of different clause, phrase (verb and other) and word structure types represented in the language samples.

TABLE 5.8 DIFFERENCES BETWEEN PRE- AND POST-INTERVENTION GROUP MEANS ON THE NUMBER OF STRUCTURE TYPES

	Group A	Group B	Group C
Structure Type	Number of Types	Number of Types	Number of Types
Clause	4	2	-1
Phrase (other)	4	1	0
Verb	3	0	1
Word	1	0	0

The number of children in each group using more of each structure type is reflected in Table 5.9.

TABLE 5.9. NUMBER OF SUBJECTS USING MORE STRUCTURE TYPES

Structure Type	Number of Subjects		
	Group A	Group B	Group C
Clause	10	6	3
Phrase (other)	10	5	5
Verb	10	5	6
Word	7	5	3

It appears, from Tables 5.8 and 5.9, that the intervention was effective in facilitating the acquisition of more clause, phrase (other) and verb structure types by all group A subjects. While there were some subjects in groups B and C, who used more structure types, group A increased their use of the number of clause and phrase structure types more than groups B and C. There were also more group A subjects who used a wider range of word structure types, although group A used only one additional word structure type after intervention.

4.1.(h) Syntax Errors

The difference between the pre- and post-intervention group means on the different types of errors, are recorded in Table 25.7 (Appendix 25), and are displayed graphically in Figure 5.15.

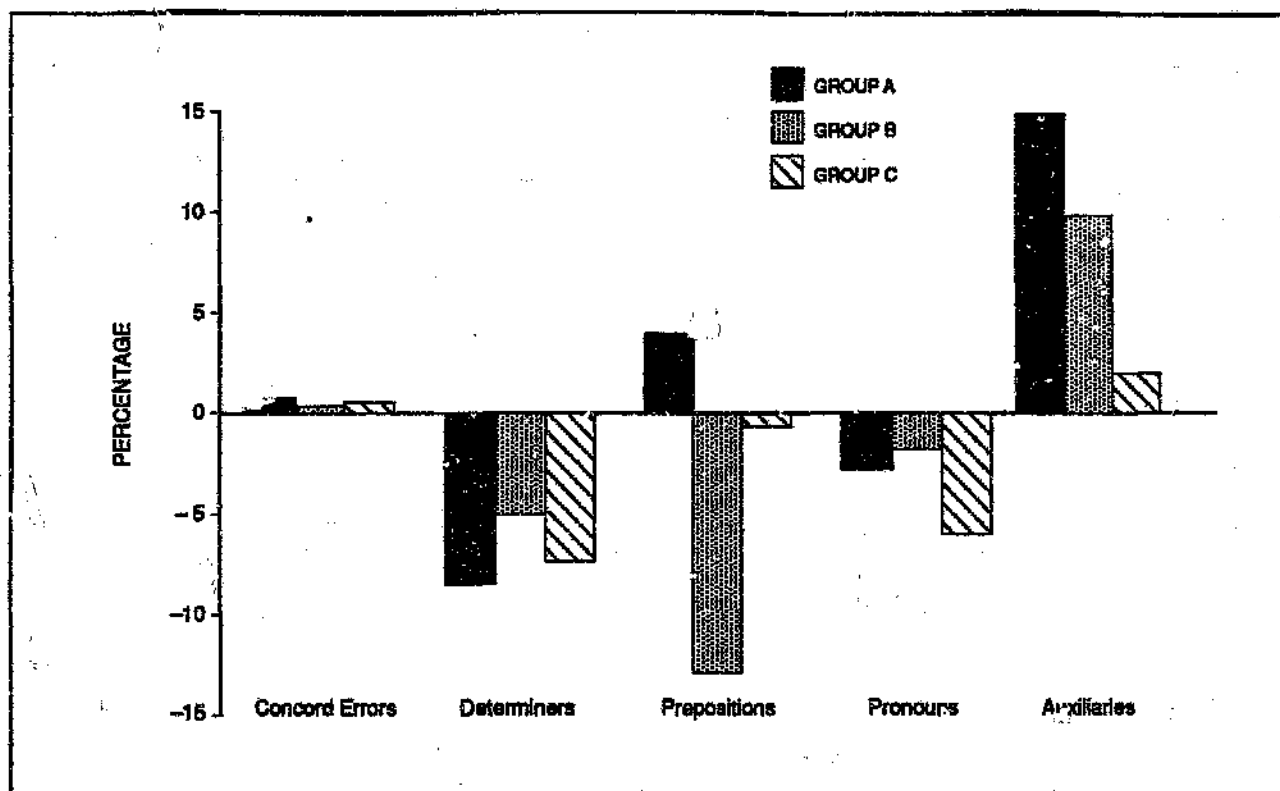


Figure 5.15. Differences between Pre- and Post-Intervention Group Means on Syntax Errors.

Errors were not specifically targeted in intervention, and group A did not produce fewer errors than groups B and C, after intervention, although there were fewer children in group A making determiner and pronoun errors (see Table 5.10).

TABLE 5.10

NUMBER OF CHILDREN MAKING EACH TYPE OF ERROR
BEFORE AND AFTER INTERVENTION

Error Type	Group	Number of Children Making Errors pre- intervention	Number of Children Making Errors post- intervention	Differ- ence
Concord	A	7	4	-3
	B	6	7	+1
	C	9	6	-3
Determiner	A	9	6	-3
	B	4	7	+3
	C	5	7	+2
Preposi- tion	A	7	6	-1
	B	7	6	-1
	C	5	8	+3
Pronouns	A	8	3	-5
	B	6	4	-2
	C	6	5	-1
Auxili- aries	A	6	6	0
	B	4	4	0
	C	7	5	-2

Group A made more preposition and auxiliary errors after intervention than before, and they increased their error production substantially more than groups B and C, who reduced the number of preposition errors, that they made. This may be attributed to group A's increased use of prepositions and modal auxiliaries, particularly.

The findings with respect to error production, suggest that increased proficiency in a second language does not necessarily lead to a reduction in the number of errors made. The need for careful consideration of the variables associated with error production, such as the opportunities for making errors, is thus obvious.

4.2. General Trends in Groups A, B and C

For the most part, group A improved on the structures targeted in intervention, which increased the complexity of their expressive syntax, and expanded their use of the different clause, phrase and word structure types in English.

Group A did not improve more than group B on some targeted structures, specifically Stage IV Clauses, post-modification, Vpart, and the past tense morpheme -ed. The fact that groups A and B showed similar gains in the use of stage IV clause structures and the use of the past tense morpheme "ed", and that both groups improved more than group C on these structures suggests that group B acquired a few more complex structures as a result of the additional input they received. This is further substantiated by the fact that group B increased their use of post-modifying clauses more than groups A and C. It is possible that the input group B received facilitated their acquisition of these structures, but this is difficult to prove.

Generally, groups B and C did not acquire more complex structures, but used more of the same structures that they used in the pre-intervention samples.

All groups used fewer stage I structures, possibly due to familiarity with the sampling context in the post-intervention assessment, but while group A then used more stage V structures, groups B and C increased their use of stage III structures.

Group C did not change their use of stage V structures, and group B used more co-ordinate clauses, which does not reflect increased proficiency. Group B increase their use of stage III phrase structures (other) while group C increased their use of stage II phrase structures (other).

Group C increased their use of auxiliaries, and the verb ending "ing" confirming that their acquisition of English was characterized by the use of more of the same structures appearing in their pre-intervention samples. This is also seen in their limited increase in the number of verb and word structure types represented in the samples.

Group C showed a reduction in the normal:abnormal response ratio, which suggests that their acquisition of English through the natural exposure at school, was characterised by increased difficulty in expressing themselves. Group B, in contrast, did not deteriorate markedly on this measure, suggesting that their increased exposure to English enabled them to maintain control over their expressive abilities.

A final difference between groups concerns the standard deviations calculated on the differences between pre- and post-intervention measures.

Groups B and C showed much larger variation around the mean than Group A on some measures, eg. the decreased use of stage I structures, and the changed use of sub-ordinate clauses, which may suggest that group A subjects were less variable in their

acquisition of structures than groups B and C. The larger standard deviations seen for group B and C indicate that factors other than the input provided to these two groups, were operating in their acquisition. These variables may be individual learner characteristics.

The hypothesis proposed in Chapter Two, that language intervention would facilitate acquisition, regardless of learner variables thus seems to have been validated by the results seen in group A.

5. Summary of Results

The results of this study, show that, where pre-school second language learners are concerned, language intervention, provided by a speech-language therapist, is more effective in facilitating the acquisition of English than an increased quantity of child-directed input or attendance at an English medium pre-school.

When evaluated over a twelve week period, the comprehension and expression of English vocabulary and syntax improved more in group A subjects than in group B or C subjects.

In addition, increased input in English, through regular contact with an English-speaking adult, is more effective than nursery school attendance in facilitating acquisition.

This was confirmed by group B's improvement on several measures, where group C's proficiency did not improve. Both the hypotheses stated in Chapter four, can therefore be accepted.

CHAPTER 6

CONCLUSION

The results of this study confirm that speech-language therapists have an important role in the area of second language acquisition, particularly in relation to pre-school children. In addition, it is possible that the focused input provided by speech-language therapists, with respect to specific content/form interactions in a language, will also be effective in facilitating acquisition by second language learners in the junior primary school (grades one and two, and standard one). Children in this phase of the education process, are only just acquiring the linguistic and cognitive skills that will enable them to use language for academic purposes in the higher classes. They are not able to learn language in a conscious, formal way, and would benefit from the natural interactive approach used by speech-language therapists. However, this does not imply that the children should be the only ones to adapt to the language demands of the school.

The South African education system should in future, enable schools to adapt to the changing linguistic and cultural profiles of their student bodies. There are many children who would benefit from bilingual education in the early grades, with increasing support in the language of the school. Teachers should therefore, ideally, be able to teach basic concepts and

skills in the children's home languages.

The acquisition of the second language can be facilitated at the same time, until the children have sufficient competence to use it as the language of learning.

A concerted effort should be made to develop the indigenous languages of South Africa so that they may be used as instructional media. Children need to develop academic skills in their home languages as well as in English, so as to derive the benefits of bilingualism and cognitive development. One way of promoting the development of African languages, is to ensure that more people become proficient in these languages. Pre- and junior primary school are the ideal settings for facilitating the acquisition of languages. Speech-language therapists, who speak the indigenous languages could teach speakers of English and/or Afrikaans, to communicate with their Zulu, Sotho, or Xhosa - speaking peers - depending on the specific language spoken in any particular region of South Africa.

If African languages are taught by native speakers, there may be higher levels of proficiency in these languages amongst white South Africans. The type of intervention described in the present study, could easily be adapted and applied to the teaching of African languages.

A logical extension of this study, would be to develop appropriate training programmes for teachers, and to research

their effectiveness.

The results on some of the proficiency measures, suggests that the group of subjects who received additional input in English from the student teacher, acquired more English than the group who were only exposed to the nursery school environment. This suggests that if teachers are supported in their attempts at developing children's language abilities, they could be as effective as language therapists. Training courses for teachers should include information on the following topics:

- 1) the nature of language and importance of integrating the content, form and use dimensions of language in intervention
- 2) the process of language acquisition, and the importance of purposeful, context-embedded interaction with children
- 3) factors affecting second language acquisition in children and the effects of bilingualism on cognition
- 4) directions on formulating specific intervention goals with respect to language content and form, based on accurate assessment of levels of language functioning and developmental sequences
- 5) activities that may be used to facilitate specific lexical and syntactic forms

- 6) specific facilitation, input features and ways of responding to children's communicative attempts e.g. expansions
- 7) elicitation techniques for providing children with opportunities to practise language forms.

The exact manner in which teachers structure their daily programmes to provide second language learners with maximum opportunities for acquisition, could also be discussed, and would depend on the school context. In schools where second language learners are in the majority, teacher directed activities could be centred around language acquisition throughout the various daily routines. In schools where teachers need to work with first and second language learners together, it may be beneficial to separate groups when activities are teacher directed, but to encourage peer group interaction when activities are less teacher directed and more child-centred. However, it is not necessary for teachers to be over-conscious of structuring the school, since the natural, child-directed talk in everyday routine events, remains the most valuable source of interaction and language learning for young children.

The results obtained by the group of subjects, who received no additional input in English, confirmed that children develop language at their own pace, regardless of whether they receive intervention or not. These subjects made considerable progress with respect to the comprehension of language, over the twelve week period. Left in the nursery school, they would continue to acquire English, and one might argue that there is no need to

intervene in the language acquisition process, at this level.

This is a debatable issue, since language intervention is not harmful in any way, and the results of this study suggest that it can in fact accelerate the acquisition process, to assist children who need to cope better with instruction in the school language. Furthermore, if the second language is acquired to promote the development of bilingualism, the outcome could be very positive for the child. The importance of continued acquisition of the home language cannot be over-emphasized, and should be stressed by teachers and therapists in their consultation with parents. A further extension of this study could be to evaluate the effects of intervention in the second language, on the status of the home language. It would be interesting to determine whether, the fact that language intervention activates the natural language acquisition processes, also leads to better functioning in the home language. It has been found that children who know two languages are more aware of language (meta-linguistic) than children who know only one (Ben Zeev, 1977; Ianco-Worrall, 1972). If this is the case, then bilingualism, acquired in optimal circumstances, such as those created by intervention contexts, should result in advanced functioning in the home language.

This research study was conducted at an integrated pre-school, where the teachers were all English-speaking. The effectiveness of language intervention was demonstrated by comparing the

acquisition of English proficiency as a result of intervention, with that resulting from an increased quantity of input and the input provided by teachers and peers in the nursery school.

There are, however, many pre-schools in South Africa that are attended by only black children, and where the teachers are all second language speakers of English. As previously mentioned, the parent communities of many of these schools are adamant that the children should learn English at school. For these children, intervention with the teachers is the only resource in the acquisition of English. This particular pre-school context provides fertile ground for further research, and should yield interesting comparative results regarding the effects of intervention without the support of native speaker input from teachers and peers. Teacher training in these schools is of paramount importance. Many of these teachers are unsure about how to develop the children's English language skills. The teaching of second languages in the black (D.E.T) schools has been notoriously uni-dimensional, without regard for the appropriate use of language in social contexts. The majority of black teachers were educated through this system and tend to teach in the same way as they were taught. Personal experience has shown that it is not uncommon for teachers to "teach" pre-school children English, through the use of imitation drills of specific structures, without regard for meaning or appropriate use.

The research design employed in this study was possibly one of

the less sophisticated designs for evaluating treatment effects. The subjects' proficiency was not re-assessed after a period of withdrawal from intervention, to establish whether the effects of the intervention and control group treatments were maintained. This may be seen as a limitation of the study, due to time and financial constraints.

In addition, ethical considerations regarding the withholding of intervention from the control groups, compelled the researcher to ensure that all the second language learners at the nursery school received intervention immediately after the end of the post-assessment phase.

It was also felt that by controlling for the variables that could possibly affect the outcome of intervention, namely, the subjects' exposure to English at home, and their length of attendance at an English pre-school, and by assessing the effects of intervention in relation to the effects of two other treatment conditions, reliable, generalizable results were obtained.

This study represents an attempt to open an area of research not previously exploited by the profession of speech-language pathology. It is hoped that the results of this study will encourage speech-language therapists to explore the area of second language acquisition further, through research, but also through making their expertise available in the educational sphere, to the advantage of all the communities of South Africa.

It is also hoped that employing bodies will recognize the valuable contribution that speech-language therapists have to offer, in the area of second language acquisition and that appropriate employment opportunities will be created.

APPENDIX 1

PARENT QUESTIONNAIRE

Identifying Information

Child's First Name _____

Surname: _____

Date of Birth: _____

Age: _____ Years _____ Months

Home Address: _____

Telephone Number: _____ Home

_____ (Mother's Work)

_____ (Father's Work)

Early History

1. Is this child the natural offspring of the parents? _____

If not, please give details _____

2. Birth order of this child _____

3. Conditions during pregnancy

a) Length of pregnancy to nearest week _____ (normal
length = 40 weeks)

b) Mother's age at birth of this child _____

c) Mother's health during pregnancy _____

d) Any surgical or medical treatment (including drugs) during pregnancy? (Please give details). _____

e) Any blood incompatibility between parents? _____

Treatment? _____

4. Birth

a) Length of labour? _____

b) Strong labour? _____

c) Was labour induced? _____

d) Type of delivery. Normal _____ Forceps _____

Suction _____ Caesarian _____

e) Presentation: Breech _____ Placenta Praevia _____

Vertex (normal) _____

f) Birth weight _____

g) Did the child suffer any birth injuries _____

(Please give details)

h) Condition of child soon after birth (eg jaundice, infections, weight loss, convulsions) _____

- i) Was the child treated for these conditions? _____
Please specify (eg. oxygen administered; blood transfusion;
incubation; other) _____

5. Feeding

- a) Were there any early difficulties with sucking,
swallowing, milk through the nose, etc? _____

b) Any food allergies? _____
c) Any later feeding difficulties? _____
(Please specify) _____

6. Milestones

- a) Was the child a quiet baby? _____
b) Age at which the child first made vocal sounds:

said first words: _____
said first sentences: _____
sat: _____
crawled: _____
walked: _____
c) Age at which child was toilet trained: _____
d) Which hand does the child use for writing, feeding
etc? _____
Has this ever changed? _____

7. Medical History

- a) Has the child ever suffered any serious illness?

Please state at which age the child suffered from each
illness _____

- b) Has the child ever been seriously injured? (Please
give details) _____

- c) Did any of the illnesses affect the child's speech or
hearing? _____

- d) Was medication prescribed for these illnesses?
(Please give details) _____

- e) Has the child had ear problems? (Please specify)

- f) Has the child's hearing and vision been tested? _____
Were there any problems? _____

8. Schooling

- a) Please list the nursery schools your child has
attended. _____

b) Does the child have any difficulties at school?_____

9. General

a) Does the child have any behaviour problems (eg. aggression; nightmares; bed-wetting; fears; finger sucking) (please give details)_____

b) How does the child get on with family members?_____

friends? _____

10. Family

a) Father's name:_____

Age:_____

Occupation:_____

Education level:_____

b) Mother's name:_____

Age:_____

Occupation:_____

Education level:_____

c) Brothers (ages and education level)_____

d) Sisters (ages and education level)_____

e) Other persons living in the home_____

11. Has the child ever had a speech, language or hearing problem? (Please give details)_____

12. Has the problem changed since it's onset? (please describe)

13. Has the child been treated for the problem? (Please give details)_____

14. Does anyone in the family have a speech, language or hearing difficulty? (Please give details)_____

APPENDIX 2

2.1. LANGUAGE BACKGROUND QUESTIONNAIRE

1. Please list the languages spoken in the home_____
2. What (language/s) do parents speak to each other?_____
3. What language/s do parents speak to the child?_____
4. What language/s do the children use when communicating with each other?_____
5. What language/s do others living in the home, speak_____
6. Which language does the child speak when communicating with:
brothers and sisters_____
mother:_____
father:_____
others living in the home:_____

friends:_____
7. What T.V. and/or radio programmes are watched in each language?_____

8. In what language are stories:
a) read to the child? _____
b) told to the child? _____
9. What language is used in church? _____

2.2. INFORMATION ON THE CHILD'S USE OF THE HOME LANGUAGE

10. Which language, would you say, does the child function best in? _____
11. Does the child speak this language as well as other children of the same age? _____
If not, what seems to be the problem? _____

12. Can the child understand everything you say to him/her? _____

13. If the child tells you something, does he/she provide enough information for you to understand what is said? _____

14. Does the child tell you about things he has done, wants to do, or has seen done, outside the immediate situation? _____

15. Does the child ask questions about names of things, places and how things work? _____

16. Are the child's sentences mostly correct? _____

17. Does he/she leave words out of sentences? _____

18. Can he/she join sentences together? _____

19. Can he/she talk about yesterday, today, tomorrow, or later?

20. Does the child know the names of most things in the
environment? _____

Please complete the attached checklist regarding the
child's use of his/her home language only (the left hand
column).

Thank you for your co-operation.

APPENDIX 2 (CONTINUED)

2.3. BILINGUAL ORAL LANGUAGE DEVELOPMENT
(B.O.L.D.)

INFORMATION ON THE CHILD'S USE OF THE DOMINANT LANGUAGE AND ENGLISH

Please tick the appropriate column if the child uses the communicative behaviour in that particular language.

Don't tick if you are unsure

	Communication Behaviour	Parent Dominant Language	Teacher English
1	The child comments on personal actions while these are happening, eg. "I'm riding fast".		
2	The child comments on the actions of others, eg. "He broke the pencil".		
3	The child is able to give an accurate description of his personal experience , eg. "I saw the animals at the zoo".		
4	The child describes a sequence of events in the order in which they occurred. eg. I went to school. Then we went to the doctor. We went to the chemist to get medicine.		
5	The child allows the person he is communicating with to speak and is able to listen without interrupting...		
6	The child follows directions eg. Tell your brother to come home and then go and wash your hands.		
7	The child starts conversations with adults and other children.		
8	The child takes turns during conversation. eg. Parents says: There was an accident on the main road. Child says: What happened?		
9	The child is able to talk about a topic of discussion over several sentences during a conversation.		
10	The child answers (responds) appropriately to simple questions. eg. Parent: Who puts out fires? Child: Firemen.		

11	The child uses language to get the attention of others. eg. Mommy, can I ask you something?		
12	The child asks questions to obtain information about people, actions and events. eg. Who came to our house last night, Mommy?		
13	The child uses language to tell others what to do. eg. Daniel, please pass me the water.		
14	The child asks for clarification when he doesn't understand what others have said. eg. I don't know what that is?		
15	The child can inform others of his personal needs, i.e. can tell what he wants. eg. I want to go to the toilet. I want the ball.		
16	The child can express feelings such as joy, fear and anger, using language. eg. "I'm cross with you".		
17	The child describes plans for events that will take place in the future. eg. "I'm going to build a house".		
18	The child expresses personal opinions and can provide a logical reason for his opinion. eg. "I don't like dogs, they bite".		
19	The child describes the solution to a problem. eg. "Put a plaster on".		
20	The child expresses imagination. eg. "I'm flying like an aeroplane".		
21	The child knows the names of most common objects and events. eg. dog, table, party.		
22	The child greets people appropriately when he comes or goes. eg. Hi! Bye!		

APPENDIX 3

TEACHER INTERVIEW

Physical Development

1. Could you comment on the child's gross motor skills, such as climbing, running, hopping?
2. Does the child have adequate fine motor co-ordination for drawing, cutting etc?
3. Have you noticed anything unusual about the child's feeding?

Cognitive Development

1. Does the child play imaginatively?
2. Can the child concentrate on an activity for the required period of time?
3. Does the child follow instructions?
4. Does the child carry out tasks quickly and efficiently?
5. Can the child formulate his/her ideas in a logical manner?

Social Development

1. Does the child relate well to peers?
2. Would you say that the child had adequate self help skills?
3. Is the child well-adjusted emotionally, or are there serious behaviour problems?
4. Do you think the child is exposed to language and literacy activities at home?

APPENDIX 4

TEST OF AUDITORY COMPREHENSION OF LANGUAGE-REVISED (TACL-R) (Carrow, 1988)

Instructions to subjects

We are going to look at some pictures. Please point to the picture that shows you what I am saying

APPENDIX 5**MODIFIED TEST OF AUDITORY COMPREHENSION OF LANGUAGE-REVISED
(Carrow, 1988)**

Original Item Number	Stimulus	Correct Response	Child's Response	Score
14	Big	2		
15	Fast	1		
16	Little	3		
17	Soft	1		
18	Tall	2		
19	Show me the two that are the same	3		
20	These two are different	1		
21	Two	1		
22	Some	3		
23	Many	3		
24	The middle car	2		
25	More	3		
26	Four	3		
27	A few	1		
31	Eating	3		
32	Jump	3		
33	Running	1		
35	Going	3		
36	Hitting	2		
37	Catching	1		
38	Giving	1		
39	Up	2		
42	That	2		
43	These	2		
44	On the table	1		
45	Under the table	3		
46	In the box	2		
47	At the side of the car	1		
48	Between the cars	2		

49	In front of the car	1		
50	Farmer	1		
51	Painter	3		
52	Hitter	2		
53	Fisherman	3		
54	Smaller	2		
55	Taller	1		
56	Fattest	2		
59	They	2		
60	He	1		
61	She	3		
62	Mother gave the ball to her	3		
63	His puppy is black and white	1		
65	We're eating apples	2		
66	Chairs	1		
67	Balls	3		
68	Coats	1		
69	Table	2		
72	The girl is sewing	2		
73	The girl is jumping	2		
74	The man painted the house	3		
75	The lion has eaten	3		
78	The boy pushes the girl	1		
79	The car bumps the train	2		
81	The boy is chased by the dog	1		
82	Who is by the table?	3		
83	When do you sleep?	2		
84	What do we eat?	3		
85	The girl is drawing	2		
86	It's not black	2		
87	The girl isn't running	1		
89	Go!	1		
90	Don't cross!	2		

91	Sleeps	1		
92	Has ice cream	1		
93	Find the car that is on the street	3		
94	Find the cat with no eyes	2		
96	A large blue ball	3		
97	A small red car	3		
98	The girl is not swimming	1		
			Total:-	69
			8	

APPENDIX 6

LEXICAL SUB-FIELDS AND MAJOR LEXEMES REPRESENTED IN THE VOCABULARY TESTS

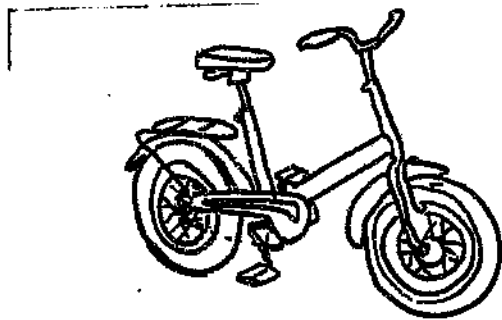
Plate No	Lexical Sub-fields	Major Lexemes
1	Family	Baby/Lady/Girl/Boy
2	Occupations	Milkman/Teacher/Farmer/Postman
3	Group/Contacts	Soldier/Group/Neighbour/Friends
4	Main Body Parts	Back/Shoulder/Neck/Tummy (Stomach/Front)
5	Limbs	Leg/Hand/Arm/Foot
6	Face	Nose/Eye/Mouth/Ear
7	Body (outside)	Hair/Beard/Nail/Moustache
8	Character	Thin/Beautiful/Strong/Ugly
9	Health Occupations	Nurse/Doctor/Dentist/Surgeon
10	Implements	Toothbrush/Plaster/Needle/Soap
11	Clothing/Outer	Hat/Coat/Gloves/Scarf
12	Clothing/Footwear	Boots/Socks/Shoes/Slipper
13	Clothing/General	Tie/Trousers (Pants) /Shirt/Jersey
14(a)	Clothing/Parts	Bow/Button/Pocket/Zip
14(b)	Clothing/Women	Bikini (Panties) /Skirt/Dress/Gown
15	Clothing/Caring	Washing/Knitting/Sewing/Ironing
16	Accessories	Necklace/Bracelet/Earrings/Handbag
17	Shows	Television/Circus/Clown/Ballerina
18	Music/Instruments	Trumpet/Guitar/Drum/Piano
19	Art/Implements	Crayon/Chalk/Brush/Paint
20	Vehicle/Parts	Wheel/Brakes/Windscreen/Pedals
21	Vehicle/Action/Location	Robot/Accident/Street (Road) /Rail
22	Vehicle/Air	Parachute/Helicopter/Plane/Jet
23	Vehicle/People	Boat/Train/Driver/Sailor
24	Animals/Water	Crab/Frog/Seal/Whale
25	Animals/Wild	Lion/Buck/Elephant/Monkey
26	Birds	Ostrich/Chicken/Parrot/Owl
27	Insects	Grasshopper/Spider/Butterfly/Bee

28	Trees/Action	Blossom/Grow/Chop/Plant
29	Light/Control	Candle/Fire/Lamp/Bulb
30	Colour	Yellow/Blue/Green/Red
31	Moving	Running/Walking/Pushing/Opening
32	Feeling	Sad/Cross/Cry/Happy
33	Recreation/Action	Swing/Skate/Hide/Kick
34	Recreation/Things	Teddy Bear/Puzzle/Kite/Doll
35	Occasions	Decorating/Birthday Party/Presents/Sick
36	Containers/Action	Open/Close/Empty/Full
37	Location	Downstairs/Upstairs/Middle/Side
38	Transport	Bicycle/Car/Bus/Tractor
39	Animals/Farm	Pig/Cow/Horse/Sheep
40	Animals/Small	Dog/Mouse/Kitten/Rabbit
41	Animals/Reptiles	Worm/Crocodile/Tortoise/Snake
42	Birds/Water	Penguin/Swan/Heron/Duck
43	Water/Control	Sea/Swimming Pool/River/Dam
44	Fruit	Banana/Pear/Apple/Orange
45	Vegetables	Cabbage/Carrot/Potato/Beans
46	Trees/Parts	Bud/Bark/Root/Branch
47	Food/Type	Soup/Cake/Jam/Bread
48	Food/Dairy	Cheese/Eggs/Ice-cream/Butter
49	Drinks	Beer/Juice/Tea/Milk
50	Food/Action	Drinking/Cooking/Feeding/Eating
51	Food/Location	Shop/Butcher/Fridge/Oven
52	Utensils	Pot/Knife/Kettle/Plate
53	Flavouring	Vinegar/Sauce/Salt/Sugar
54	Moving/Static	Calling/Standing/Sleeping/Sitting
55	Making/General	Making/Building/Helping/Holding
56	Language/Implements	Telephone/Paper/Pen/Typewriter
57	Recreation/Sports	Swimming/Cricket/Soccer/Tennis
58	Building/Types	House/Flat/Hut/Tent
59	Building/Parts	Door/Window/Roof/Wall
60	Building/Outside/Rooms	Gate/Garage/Kitchen/Bat. room
61	Furniture/General	Cupboard/Table/Chair/Curtains
62	Bathroom	Toilet//Tap/Bath/Shower
63	Tools	Nail/Saw/Hammer/Ladder

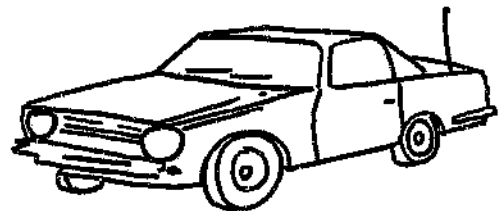
64	Tools/Farm/Garden	Spade/Axe/Rake/Mower
65	Containers/Type	Box/Schoolbag(Bag)/Bottle/Basket
66	Size	Tall/Short(Small)/Long/Thin
67	Shape	Circle/Square/Line/Dot
68	Period/Day	Young/Old/Midnight/Morning
69	Location	Upstairs/Outside/Inside/Downstairs
70	State	Same/Different/Twins/Equal
71	Educational/Parts	Playground/Classroom/Blackboard/Desk
72	Space/Entities	Sun/Moon/Star/Rocket
73	Land	Mountain/Jungle/Sand/Ice
74	Climate	Raining/Sunny/Cloudy/Snowing
75	Weapons/Type	Sun/Stone/Stick/String

APPENDIX 7

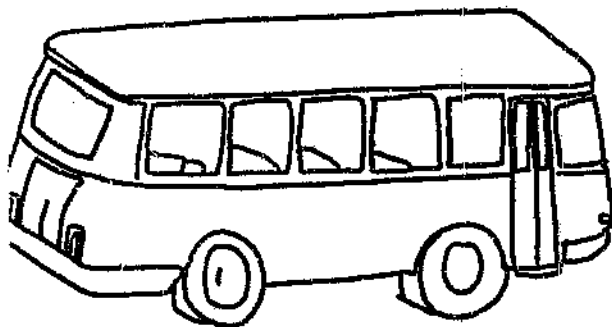
Item 38 of Vocabulary Test



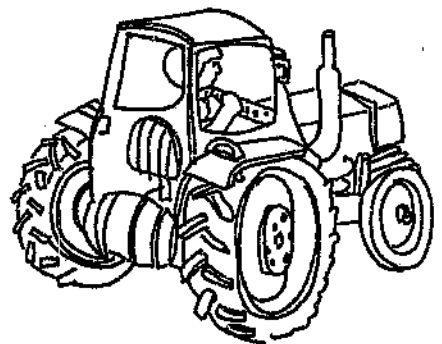
1.



2.



3.



4.

APPENDIX 8**RECEPTIVE VOCABULARY TEST**

CHILD'S NAME: _____ DATE OF BIRTH: _____

TEST DATE: _____ AGE: _____

TESTER: _____

Plate No	Stimulus	Correct Response	Child's Response
1	Show me boy	4	
2	Show me postman	4	
3	Show me neighbour	3	
4	Show me neck	2	
5	Show me foot	4	
6	Show me ear	4	
7	Show me beard	2	
8	Show me strong	3	
9	Show me doctor	2	
10	Show me needle	3	
11	Show me coat	2	
12	Show me slipper	4	
13	Show me trousers	2	
14(a)	Show me bow	1	
14(b)	Show me skirt	4	
15	Show me knitting	2	
16	Show me necklace	1	
17	Show me circus	2	
18	Show me guitar	2	
19	Show me crayon	1	
20	Show me windscreen	3	
21	Show me robot	1	
22	Show me helicopter	2	
23	Show me boat	1	
24	Show me whale	4	
25	Show me buck	2	

26	Show me parrot	3	
27	Show me butterfly	3	
28	Show me seed	3	
29	Show me lamp	3	
30	Show me red	4	
31	Show me he walks	2	
32	Show me cross	2	
33	Show me hiding	3	
34	Show me doll	4	
35	Show me sick	3	
36	Show me open	1 or 3	
37	Show me who's in the middle	3	
38	Show me tractor	4	
39	Show me sheep	4	
40	Show me rabbit	2	
41	Show me worm	1	
42	Show me goose	2	
43	Show me dam	4	
44	Show me pear	2	
45	Show me beans	4	
46	Show me pip	1	
47	Show me soup	1	
48	Show me butter	4	
49	Show me beer	1	
50	Show me who's feeding	3	
51	Show me oven	4	
52	Show me pot	1	
53	Show me salt	2	
54	Show me who's calling	1	
55	Show me who's making	1	
56	Show me paper	2	
57	Show me cricket	4	
58	Show me hut	2	
59	Show me roof	3	
60	Show me kitchen	3	
61	Show me curtain	4	

62	Show me bath	4	
63	Show me saw	2	
64	Show me rake	3	
65	Show me box	1	
66	Show me short	2 or 3	
67	Show me line	3	
68	Show me night	3	
69	Show me inside	3	
70	Show me different	2	
71	Show me desk	4	
72	Show me moon	2	
73	Show me mountain	1	
74	Show me sunny	3	
75	Show me stick	3	

Child's Score: _____

Total: _____

Percentage: _____

APPENDIX 2**EXPRESSIVE VOCABULARY TEST****CHILD'S NAME:** _____ **DATE OF BIRTH:** _____**TEST DATE:** _____ **AGE:** _____**TESTER:** _____

Plate No	Stimulus Sentence	Correct Response	Child's Response
1	This is a girl This is a _____	2 (lady, woman)	
2	This is a milkman This is a _____	3 (farmer)	
3	This is a group These are two _____	4 (friends, children)	
4	This is your back This is your _____	4 (tummy, stomach, front)	
5	This is your arm This is your _____	2 (hand)	
6	This is your mouth This is your _____	1 (nose)	
7	This is your hair This is your _____	3 (nail)	
8	This man is strong This man is _____	1 (thin)	
9	This is a hairstylist This is a _____	4 (dentist)	
10	This is soap This is a _____	1 (toothbrush)	
11	This is a scarf These are _____	3 (gloves)	
12	This is a shoe This is a _____	1 (boot)	
13	This is a tie This is a _____	3 (shirt)	
14(a)	This is a pocket This is a _____	2 (button)	
14(b)	This is a dress These are _____	1 (pyjamas)	
15	He is washing She is _____	4 (ironing)	

16	This is a bracelet These are _____	3 (earings)	
17	This is a ballerina This is a _____	3 (clown)	
18	This is a trumpet This is a _____	4 (piano)	
19	You paint on the chart with a paintbrush. You write on the board with _____	2 (chalk)	
20	This is a bicycle This is a _____	1 (wheel)	
21	The train goes on the rail The car goes on the _____	3 (road, street)	
22	This is an airoplane This is a _____	1 (parachute)	
23	This man is a sailor This man is a _____	3 (driver)	
24	This is a frog This is a _____	1 (crab)	
25	This is an elephant This is a _____	4 (monkey)	
26	This bird is an owl This bird is an _____	1 (ostrich)	
27	This is a bee This is a _____	2 (spider)	
28	This is a flower This is a _____	2 (tree)	
29	This is a candle light This is a _____	2 (fire)	
30	This colour is blue This colour is _____	3 (green)	
31	This man is pushing This man is _____	1 (running)	
32	This face is sad This face is _____	4 (happy)	
33	This boy is kicking This boy is _____	2 (skating)	
34	This is a puzzle This a _____	3 (kite)	

35	Here they are decorating a christmas tree Here they are having a _____	2 (birthday party)	
36	This bottle is full This bottle is _____	4 (empty, closed)	
37	This girl is downstairs This girl is _____	2 (upstairs)	
38	This is a car This is a _____	3 (bus)	
39	This is a cow This is a _____	3 (horse)	
40	This is a dog This is a _____	4 (mouse)	
41	This is a tortoise This is a _____	2 (crocodile)	
42	This is a fish This is a _____	1 (penguin)	
43	This is the river This is the _____	1 (sea)	
44	This is a banana This is an _____	3 (apple)	
45	This is a cabbage This is a _____	2 (carrot)	
46	This is a tree This is a _____	4 (bush)	
47	This is a slice of bread This is some _____	3 (jam)	
48	This is cheese These are _____	2 (eggs)	
49	This is milk This is _____	3 (tea)	
50	This woman is drinking This man is _____	2 (cooking)	
51	We buy food from the shop We buy meat from the _____	2 (butcher, butchery)	
52	We cut meat with a knife We boil water in the _____	3 (kettle)	

53	We drink juice after eating We put this on our food _____	3 (tomato sauce)	
54	This girl is sitting This girl is _____	3 (sleeping)	
55	These men are pulling him This man is _____	2 (building)	
56	We type with a typewriter We write with a _____	3 (pen)	
57	This boy is playing soccer This girl is playing _____	3 (tennis)	
58	Some people live in a house Some people live in a _____	3 (tent)	
59	We open the door We open the _____	2 (window)	
60	This is a garage This is a _____	1 (gate)	
61	We sit on the chair We put our clothes on the _____	1 (cupboard, wardrobe)	
62	We sleep in a bed We get water from a _____	3 (tap)	
63	We climb the ladder We hit the nail with a _____	3 (hammer)	
64	We cut grass with a lawnmower We chop wood with an _____	2 (axe)	
65	We put food in a basket We go to school with our _____	2 (suitcase, schoolbag, bag)	
66	This man is tall This man is very _____	2 (small, little, short)	
67	This is a square This is a _____	1 (circle)	
68	This girl is young This lady is _____	2 (old)	
69	This cat is at the bottom This cat is _____	1 (on top)	

70	These two are different These two are the _____	1 (same)	
71	This is a classroom This is a _____	1 (park, playground)	
72	This is the sun This is a _____	3 (star)	
73	This is the mountain This is the _____	2 (jungle, woods)	
74	Here it is raining Here it is _____	4 (snowing)	
75	This is a gun This is a _____	4 (string)	

CHILD'S SCORE: _____

TOTAL: _____

PERCENTAGE: _____

APPENDIX 10

INSTRUCTIONS TO SUBJECTS FOR VOCABULARY TESTS

Receptive

We are going to look at some pictures.

I am going to say a word, and I want you to point to the picture that tells you about the word.

Expressive

Let's look at the pictures. I will show you one, and ask you to finish what I say about it.

APPENDIX 11

TEACHERS' RATING SCALE OF VOCABULARY PROFICIENCY

Please rate the children in your group on the rating scale below by placing an X on the relevant point on the scale.

Key

- 0 - 1 The child understands and uses only a few English words.
- 1 - 2 The child understands and uses the English words used regularly at school.
- 2 - 3 The child understands and uses English words related to experiences outside the school environment.
- 3 - 4 The child has a wide vocabulary and understands most of what is said to him/her.
- 4 - 5 The child's vocabulary is like that of a native speaker of English.

Child's Name Rating of Vocabulary Skills

1. _____	1	2	3	4	5
2. _____	1	2	3	4	5
3. _____	1	2	3	4	5

APPENDIX 12 RAW SCORES ON PILOT VOCABULARY TESTS

Subject Number	Receptive Test Scores		Expressive Test Scores		Teacher's Ratings
	T1	T2	T1	T2	
1	52	56	52	54	55
2	66	66	60	62	60
3	62	62	58	58	60
4	52	58	52	56	55
5	60	68	58	58	60
6	66	66	60	60	60
7	70	72	65	67	77
8	69	72	65	68	77
9	72	72	66	69	70
10	75	75	70	72	77
11	71	78	77	77	75
12	78	78	72	74	75
13	94	94	92	92	100
14	78	80	78	78	80
15	76	80	78	78	85
16	79	84	78	78	80
17	49	50	48	48	50
18	50	53	49	49	50
19	76	76	70	70	75
20	84	84	80	83	85
21	89	89	86	86	85
22	86	86	78	82	85
23	85	85	78	78	85
24	55	55	52	54	55
25	88	88	86	84	85
26	53	57	50	54	57
27	86	86	79	82	85
28	65	66	62	62	60
29	87	89	80	80	85
30	89	89	86	86	85

APPENDIX 13

TEACHER GUIDELINES FOR ELICITING THE LANGUAGE SAMPLE

1. **Listen** to the child and focus on what he/she has said.
2. Be patient. Don't overpower the child. **Don't ask too many questions.** Allow the child time to speak. Don't be afraid of pauses.
3. Follow the child's lead. Maintain the topic of conversation with your responses, and add new information where appropriate.
4. Show the child that what he/she has to say is important and give your undivided attention.
5. Don't ask questions that the child knows you know the answer to.

APPENDIX 14

THE LANGUAGE SAMPLE - TEACHER'S INSTRUCTIONS

1. Ask the child to tell you about something that he has personal experience of: example:
 - a) "Tell me about getting dressed in the morning".
 - b) Tell me what happens when you go to a birthday party.
 - c) Tell me what happens when you go to the doctor.
 - d) Tell me about your visit to the zoo.
2. Ask the child to tell you what is happening in the sequence story.
3. Ask the child to describe the pictures (choose 3)

APPENDIX 15

LIST OF CLAUSE STRUCTURE TYPES ON THE L.A.R.S.P. PROFILE

Stage 1 (Major)	"V" (Command)	"Q" (Quest)	"V" "N" Other		(5 Types)
Stage II	VX	QX	SV SO SC Neg X	AX VO VC Other	(10 Types)
Stage III	VXY Let XY do XY	QXY VS (X)	SVC SVO SVA Neg XY	VCA VOA VOdoi Other	(13 Types)
Stage IV	+S VXY+	QVS QXY+ VS (X+) tag	SVOA SVCA SVdoi SVOC	AAXY Other	(12 Types)
Stage V	Co-ord (Command) Other (Command)	Co-ord (Question) Other (Question)	Co-ord 1 SubordA1 Subord C Subord S Subord O Comparative Postmod Clause 1	1+ A1+ 1+	(14 Types)
Stage VI	Passive Complement How What				(4 Types)
Stage VII	A Connectivity Comment Clause Emphatic ORDER	it there other			(6 Types)

**APPENDIX 16 LIST OF PHRASE STRUCTURE (OTHER) TYPES ON THE
L.A.R.S.P. PROFILE**

Stage II	DN AdjN NN PrN	Int X Other	(6 Types)
Stage III	DAdjN AdjAdjN Pr DN PronP Prono	other	(6 Types)
Stage IV	NP Pr NP Pr DAdjN CX KcX	N C	(6 Types)
Stage V	Postmod phrase		(1 Type)
Stage VI	Initiator NP Co-ord		(2 Types)

**APPENDIX 17 THE PRE INTERVENTION PERCENTAGE SCORES ACHIEVED
BY EACH SUBJECT ON THE COMPREHENSION AND
VOCABULARY MEASURES AND THE ASSIGNED
STANDARD DEVIATION SCORES (SX)**

Subject Number	Compre- hension		Recep- tive	Vocabu- lary	Expres- sive	Vocabu- lary (Naming)
	% Score	Sx Score	% Score	Sx Score	% Score	Sx Score
1	40.90	-2	40.79	-2	11.84	-2
2	48.48	-1	40.79	-2	19.74	-2
3	46.96	-2	50.00	-1	18.42	-2
4	71.21	+1	55.26	-1	46.05	-1
5	59.09	+1	52.63	-1	56.58	+1
6	69.69	+1	65.79	+1	60.52	+1
7	75.75	+1	71.05	+1	63.18	+1
8	69.69	+1	63.16	+1	60.53	+1
9	80.30	+2	73.68	+1	57.89	+1
10	83.30	+2	64.47	+1	55.26	+1
11	37.87	-2	31.58	-2	28.94	-2
12	43.94	-2	42.11	-2	27.63	-2
13	48.48	-1	44.70	-1	36.84	-1
14	59.09	-1	75.00	+1	57.89	+1
15	63.63	-1	65.10	+1	47.36	-1

APPENDIX 17 (CONTINUED)

**THE PRE INTERVENTION PERCENTAGE SCORES ACHIEVED BY EACH SUBJECT
ON THE COMPREHENSION AND VOCABULARY MEASURES AND THE ASSIGNED
STANDARD DEVIATION SCORES (SZ)**

16	74.24	+1	54.00	-1	66.00	+1
17	80.30	+2	85.52	+2	65.70	+1
18	77.27	+1	85.53	+2	72.37	+2
19	81.81	+2	81.58	+2	76.31	+2
20	72.24	+1	81.58	+2	76.31	+2
21	46.96	-2	44.74	-1	35.53	-1
22	45.45	-2	38.16	-2	28.95	-2
23	40.90	-2	40.79	-2	40.79	-1
24	62.12	-1	52.63	-1	40.79	-1
25	50.00	-1	30.26	-2	21.05	-2
26	59.09	-1	61.84	+1	27.31	-2
27	74.24	+1	67.10	+1	72.37	+2
28	84.84	+2	74.28	+1	59.21	+1
29	86.36	+2	75.00	+1	76.32	+2
30	83.30	+2	73.69	+1	75.00	+2
Mean %	63.92		59.49		49.43	
Standard Devia- tion	15.61		16.48		19.96	

APPENDIX 18
**PRE-INTERVENTION SCORES OBTAINED BY EACH SUBJECT
ON THE PRISM-L MEASURES AND THE ASSIGNED STANDARD
DEVIATION SCORE (Sx)**

Subject Number	Total Number of minor Types		Minor TTR		Total number of major types		Major TTR		Number of Fields		Number of Sub- fields	
		Sx		Sx		Sx		Sx		Sx		Sx
1	9	-2	0,75		9	-2	0,82		7	-2	9	-2
2	8	-2	0,8		8	-2	1,0		4	-2	8	-2
3	19	-1	0,24		25	-1	0,45		16	-1	23	-1
4	29	+1	0,11		42	+1	0,30		12	-1	22	-1
5	30	+1	0,20		44	+1	0,57		19	+1	27	+1
6	29	+1	0,20		47	+1	0,51		21	+1	33	+1
7	28	-1	0,19		52	+1	0,62		19	+1	34	+1
8	22	-1	0,13		39	-1	0,51		13	-1	28	+1
9	34	+1	0,24		55	+1	0,61		19	+1	37	+1
10	52	+2	0,29		63	+1	0,44		22	+1	42	+2
11	16	-1	0,23		20	-2	0,45		15	-1	18	-1
12	6	-2	0,3		12	-2	0,52		4	-2	6	-2
13	18	-1	0,38		29	-1	0,67		16	-1	20	-1
14	27	-1	0,33		30	-1	0,75		11	-1	20	-1
15	25	-1	0,21		34	-1	0,45		17	+1	28	+1

APPENDIX 18 (CONTINUED)

**PRE-INTERVENTION SCORES OBTAINED BY EACH SUBJECT
ON THE PRISM-L MEASURES AND THE ASSIGNED STANDARD
DEVIATION SCORE (Sx)**

16	32	+1	0,27		47	+1	0,5		17	+1	28	+1
17	28	-1	0,23		56	+1	0,55		19	+1	34	+1
18	45	+2	0,30		49	+1	0,65		23	+2	34	+1
19	31	+1	0,27		50	+1	0,67		20	+1	36	+1
20	45	+2	0,26		69	+2	0,61		21	+1	38	+2
21	1	-2	1,0		4	-2	1,0		5	-2	6	-2
22	24	-1	0,25		36	-1	0,64		15	-1	22	-1
23	16	-1	0,40		32	-1	0,73		15	-1	24	-1
24	24	-1	0,20		42	+1	0,61		16	-1	23	-1
25	30	+1	0,10		43	+1	0,3		21	+1	31	+1
26	39	+1	0,23		51	+1	0,54		18	+1	29	+1
27	39	+1	0,22		65	+2	0,52		24	+2	38	+2
28	60	+3	0,21		80	+2	0,58		18	+1	41	+2
29	34	+1	0,28		57	+1	0,86		20	+1	34	+1
30	45	+2	0,16		70	+2	0,54		25	+2	37	+1
X	28.1		0,24		42		0,56		16,4		27	
SD	13.5		0,07		19,2		0,12		5,57		10.5	

APPENDIX 19 **EACH SUBJECT'S PROFICIENCY GROUP ON THE**
COMPREHENSION, VOCABULARY AND PRISM-L MEASURES

Subject	Comp	Vocab R	Vocab E	Major Types	Minor Types	Sub- Fields	Fields
1	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
4	+	-	-	+	+	-	-
5	+	-	+	+	+	+	+
6	+	+	+	+	+	+	+
7	+	+	+	-	+	+	+
8	+	+	+	-	-	+	-
9	+	+	+	+	+	+	+
10	+	+	+	+	+	+	+
11	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-
14	-	+	+	-	-	-	-
15	-	+	-	-	-	+	+
16	+	-	+	+	+	+	+
17	+	+	+	+	+	+	+
18	+	+	+	+	+	+	+
19	+	+	+	+	+	+	+
20	-	+	+	+	+	+	+
21	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-
24	-	-	-	+	+	-	-
25	-	-	-	+	+	+	+
26	+	+	-	+	+	+	+
27	+	+	+	+	+	+	+
28	+	+	+	+	+	+	+
29	+	+	+	+	+	+	+
30	+	+	+	+	+	+	+

APPENDIX 20 GROUP MEANS ON L.A.R.S.P. MEASURES (PRE-INTERVENTION)

CLAUSE STRUCTURES

Stage	% Usage	Mean Number of Clause Structure Types
I	30,61	13
II	19,46	
III	29,88	
IV	6,69	
V	14,82	

STAGE V CLAUSE STRUCTURES

Co-ordinate Clauses	55,62%
Sub-ordinate Clauses	21,67%
Post Modification	3,09%

PHRASE STRUCTURES (OTHER)

Stage	% Usage	Mean Number of types
Stage II	35.15%	8
Stage III	49.88%	
Stage IV	10.06%	
Stage V	0.12%	
Stage VI	1.47%	

APPENDIX 20 (CONTINUED)

VERB PHRASE

VV (Verb + Verb)	9,28%
V part (Verb + Particle)	10,39%
Cop (Copula)	26.08%
Aux m (modal auxiliary)	3,20%
Aux o (other auxiliary)	39,57%
Neg v (Negative + Verb)	4,51%
Complex VP	0%
Mean Number of VP Types	4%

EXPANSION RATIO

0.93

WORD STRUCTURES

ing	39,44%
pl	16.31%
-ed	9.13%
-en	0.12%
3s	7.39%
gen	1.90%
n't	2.91%
cop	5.57%
'aux	13.55%
est/er/ly	1.76%
Number of Types	5.0

APPENDIX 20 (CONTINUED)**ERRORS**

Concord	3.66%
Determiner	15.39%
Preposition	21.2%
Pronoun	7.46%
Auxiliary	8.66%

SUMMARY MEASURES

Mean Sentence Length	4.52
Mean Number of Sentences/turn	1.23
Spontaneous: Response Ratio	0.74
Normal:Abnormal Response Ratio	8.19

**APPENDIX 21 EACH SUBJECT'S PROFICIENCY GROUPING ON EACH
L.A.R.S.P. MEASURE**

Subjects	St IV Clause	Subord	Post mod	St VI Phrase (other)	Exp Ratio	Clause Types	Phrase Types	VP Types	Word Types
1	-	-	-	-	-	-	-	-	-
2	-	-	-	-	+	-	-	-	-
3	+	-	+	-	-	-	-	-	+
4	+	+	+	+	-	+	-	+	+
5	+	+	+	-	+	+	+	+	+
6	+	-	-	+	-	+	+	+	+
7	+	-	+	-	-	-	-	+	-
8	+	+	-	-	+	-	+	+	+
9	+	+	+	+	+	+	+	+	+
10	+	+	+	+	+	+	+	+	+
11	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-
13	-	-	+	-	-	+	-	+	-
14	+	+	-	+	-	+	-	-	-
15	+	+	+	+	+	-	+	+	-
16	+	-	-	+	-	-	+	-	+
17	+	+	+	-	+	-	+	+	+
18	-	+	+	-	+	+	+	+	+
19	+	+	-	+	+	+	+	+	+
20	+	+	-	+	+	+	+	+	+
21	-	-	-	-	-	-	-	-	-
22	-	+	-	-	+	-	-	+	-
23	-	-	-	+	-	-	-	+	-
24	-	-	-	+	+	+	+	+	-
25	+	+	-	+	+	+	+	+	-
26	+	+	-	+	+	-	+	+	+
27	+	+	-	+	-	+	+	+	+
28	+	+	-	+	-	+	+	+	+
29	-	+	+	-	+	+	-	+	+
30	+	+	+	+	+	+	+	+	+

APPENDIX 21 (CONTINUED)

Subjects	MSL	Mean No Sentences/ Turn	Spon:Resp Ratio	Normal:Abnormal Response Ratio
1	-	-	-	-
2	-	-	-	-
3	-	-	-	+
4	+	-	-	+
5	+	-	-	-
6	+	+	+	-
7	+	-	-	-
8	+	-	+	-
9	+	+	-	.
10	+	-	+	+
11	-	+	-	-
12	-	-	-	-
13	-	-	-	-
14	+	-	-	-
15	+	+	+	-
16	-	+	-	+
17	+	-	-	+
18	-	+	-	+
19	-	+	-	+
20	+	+	-	-
21	-	+	-	-
22	-	-	-	+
23	-	-	-	-
24	+	-	-	-
25	+	-	+	-
26	+	+	+	+
27	+	+	-	+
28	+	+	+	-
29	-	+	-	+
30	+	-	+	-

**APPENDIX 22(a) PROFICIENCY GROUP MEANS ON COMPREHENSION
VOCABULARY AND P.R.I.S.M.-L MEASURES (PRE-
INTERVENTION)**

	Low Proficiency Group (-)	High Proficiency Group (+)	F Value	pr > F
Comprehension	49,41	75,01	60,31	0,0001
Receptive Vocabulary	45,14	70,47	42,04	0,0001
Expressive Vocabulary	31,88	62,83	43,96	0,0001
Number of Minor Types	17,46	36,35	27,19	0,0001
Number of Major Types	25,53	54,58	38,40	0,0001
Minor TTR	0,32 *0,26	0,22	2,84	0,1031
Major TTR	0,63 *0,44	0,57	0,85	0,3636
Fields	12,15	19,70	24,55	0,0001
Sub-fields	17,84	34,00	48,33	0,0001
Minor:Major Token Ratio	1,36	1,71	5,76	0,0232
	*Corrected TTR's			

APPENDIX 22(b) PROFICIENCY GROUP MEANS ON L.A.R.S.P. MEASURES

CLAUSE STRUCTURE

% of Clause Structures at:	Low Proficiency Group (-)	High Proficiency Group (+)
Stage I	58,62	16,59
Stage II	20,15	19,12
Stage III	22,42	36,91
Stage IV	0,26	9,90
Stage V	3,65	19,78
Number of Clause Structure Types	9	15
% of Stage V Structures that were		
Co-ord	3	64,32
Sub-ord	1,	31,6
Postmod	0	4,64

PHRASE STRUCTURES (OTHER)

% of Structures at:	Low Proficiency Group (-)	High Proficiency Group (+)
Stage II	41,21	32,11
Stage III	38,23	55,69
Stage IV	9,95	10,11
Stage V	0	0,18
Stage VI	0,61	1,97
Number of Phrase Structure Types	5	10

APPENDIX 22(b) (CONTINUED)**PROFICIENCY GROUP MEANS ON L.A.R.S.P. MEASURES****VERB PHRASE**

% of Verb Phrases that were:	Low Proficiency Group (-)	High Proficiency Group (+)
VV	7,11	10,36
Vpart	3,09	14,04
Cop	45,29	16,48
Auxm	0	4,80
Auxo	22,87	47,92
Neg V	1,64	5,94
Complex VP	0	0
Number of Types	2	5

EXPANSION RATIO

	Low Proficiency Group (-)	High Proficiency Group (+)
Expansion Ratio	0,58	0,97

APPENDIX 22 (b) (CONTINUED)

PROFICIENCY GROUP MEANS ON L.A.R.S.P. MEASURES

WORD STRUCTURES

% of Word Structures that were:	Low Proficiency Group	High Proficiency Group
-ing	49,06	34,62
-pl	12,33	18,30
-ed	7,33	10,04
-en	0	0,37
3s	4,66	47,18
gen	1,76	1,97
n't	1,56	3,59
'cop	6,96	4,87
'aux	6,34	17,15
est/er/ly	0	0,17
No. of word structures used	3	6

ERRORS

Errors of:	Low Proficiency Group (-)	High Proficiency Group (+)
Concord	2,71	4,13
Determiners	24,86	10,66
Prepositions	21,43	19,01
Pronouns	3,67	9,38
Auxiliaries	4,61	10,69

APPENDIX 22(b) (CONTINUED)

PROFICIENCY GROUP MEANS ON L.A.R.S.P. MEASURES

SUMMARY MEASURES

	Low Proficiency Group (-)	High Proficiency Group (+)
MSL	2,59	5,67
Mean No of S's per Turn	0,67	1,55
Spon: Resp Ratio	0,13	1,05
Normal:Abnormal Resp Ratio	4,26	10,16

APPENDIX 23

HOME EXPOSURE GROUP MEANS ON PRE-INTERVENTION L.A.R.S.P. MEASURES

TABLE 23.1. CLAUSE STRUCTURES

% Clause Structures at:	Home Exposure Group 1	Home Exposure Group 2
Stage I	44,77	11,44
Stage II	19,71	19,21
Stage III	20,04	39,71
Stage IV	3,29	10,08
Stage V	10,51	19,12
Number of clause structure types	11	15
% of Stage V structures	that were:	
Co-ord	47,01	64,25
Sub-ord	12,84	30,51
Postmod	0,86	4,99

TABLE 23.2 PHRASE STRUCTURES (OTHER)

% Structures at Stage:	Home Exposure Group 1	Home Exposure Group 2
II	38,11	32,18
III	44,54	55,22
IV	9,45	10,67
V (Post mod)	0	0,24
VI	1,24	1,70
Number of Phrase Structure Types	6	11

TABLE 23.3. VERB PHRASE

% of Verb Phrases Containing	Home Exposure Group 1	Home Exposure Group 2
VV	7,6	10,96
Vpart	11,87	8,91
Cop	34,66	17,5
Auxm	0,25	6,14
Auxo	28,83	50,31
NegV	3,19	5,83
Complex VP	0	0
Number of VP Types	3	5

TABLE 23.4. EXPANSION RATIO

Home Exposure Group 1	Home Exposure Group 2
0,62	1,06

TABLE 23.5 WORD STRUCTURE

% of Word Structures that wer	Home Exposure Group 1	Home Exposure Group 2
-ing	45,17	33,70
-pl	15,40	17,22
-ed	9,17	9,10
-en	0,17	0,08
3s	5,59	9,18
gen	1,84	1,97
n't	3,69	2,14
'cop	4,63	6,49
'aux	7,60	19,44
est/er/ly	0	0,53
Number of Word Structure Types	4	6

TABLE 23.6. ERRORS

	Home Exposure Group 1	Home Exposure Group 2
Concord Errors	2,97%	3,29%
Determiner Errors	22,77%	7,46%
Preposition Errors	28,94%	13,46%
Pronoun Errors	8,11%	6,81%
Auxiliaries Errors	8,19%	9,13%

TABLE 23.7 SUMMARY MEASURES

	Home Exposure Group 1	Home Exposure Group 2
Mean Sentence Length	3,76	5,49
Mean Number of Sentences per Turn	0,84	1,63
Spontaneous: Response Ratio	0,21	1,28
Normal: Abnormal Response Ratio	3,98	9,60

APPENDIX 24 SCHOOL EXPOSURE GROUP MEANS ON PRE-INTERVENTION
L.A.R.S.P. MEASURES

TABLE 24.1. CLAUSE STRUCTURE

Percentage of clause structures at:	School Exposure Group 1	School Exposure Group 2	School Exposure Group 3
Stage I	51,31	17,46	13,59
Stage II	16,58	21,73	19,68
Stage III	22,04	36,54	27,9
Stage IV	4,74	6,31	16,39
Stage V	8,99	17,96	22,43
Number of Clause Structure Types	11	13	16
Percentage of Stage V	Structure	Types	
Co-ord	36,58	64,98	84,84
Sub-ord	19,0	25,13	15,04
Post-mod	2,75	3,88	0,55

TABLE 24.2. PHRASE STRUCTURE (OTHER)

Percentage of Phrase Structures (other) at:	School Exposure Group 1	School Exposure Group 2	School Exposure Group 3
Stage II	40,21	33,99	20,64
Stage III	41,61	53,64	64,12
Stage IV	6,82	10,59	10,99
Stage V	0	0,11	0
Stage VI	0,68	1,54	4,25
Number of Phrase Structure (other) Types	7	9	10

TABLE 24.3. VERB PHRASE

Percentage of Verb Phrases Containing	School Exposure Group 1	School Exposure Group 2	School Exposure Group 3
VV	5,78	12,16	8,85
Vpart	4,83	15,33	7,97
Copula	38,35	36,04	27,10
Modal auxiliary	3,61	2,90	3,04
Other auxiliary	30,81	48,02	46,49
NegV	3,48	5,18	5,26
Complex VP	0	0	0
Number of Verb Phrase Types	3	4	5

TABLE 24.4 EXPANSION RATIO

	School Exposure Group 1	School Exposure Group 2	School Exposure Group 3
Expansion Ratio	0,68	0,93	1,02

TABLE 24.5. WORD STRUCTURE

Percentage of Word Structures that were	School Exposure Group 1	School Exposure Group 2	School Exposure Group 3
-ing	41,87	37,99	36,86
pl	13,24	19,34	13,49
-ed	6,93	10,27	12,32
-en	0	0	1,23
3s	6,25	7,93	9,26
gen	1,48	2,08	2,70
n't	1,33	4,38	1,89
'cop	8,33	3,41	5,27
'aux	11,75	14,30	16,97
est/er/ly	0,12	0,13	0
Number of Word Structure Types	4	6	7

TABLE 24.6. ERRORS

Mean Error Scores On:	School Exposure Group 1	School Exposure Group 2	School Exposure Group 3
Concord	2,90	4,23	3,88
Determiner	16,89	16,03	6,29
Prepositions	21,54	22,66	12,59
Pronouns	1,38	11,78	10,21
Auxiliaries	4,14	11,03	14,89

TABLE 24.7. SUMMARY MEASURES

	School Exposure Group 1	School Exposure Group 2	School Exposure Group 3
Mean Sentence Length	3,94	5,11	5,9
Mean Number of Sentences per Turn	1,05	1,35	1,39
Spontaneous: Response Ratio	0,54	0,83	1,14
Normal:Abnormal Responses	8,38	9,35	15,3

APPENDIX 25. PRE- AND POST-INTERVENTION GROUP MEANS ON I.A.R.S.P. MEASURES

TABLE 25.1. CLAUSE STRUCTURE

Stage	Groups	Pre	Post	Diff	Standard Devia- tions
I	A	27,39	17,97	- 9,417	6,07
	B	33,73	27,21	- 6,521	27,66
	C	30,70	18,22	-12,475	16,67
II	A	20,40	17,46	- 2,94	6,28
	B	20,53	17,35	- 3,17	9,40
	C	17,46	20,73	3,27	13,32
III	A	32,75	31,66	- 1,09	14,67
	B	26,12	33,77	7,66	17,48
	C	30,77	36,26	5,49	17,47
IV	A	7,94	12,87	4,93	6,78
	B	5,01	9,78	4,78	14,05
	C	7,12	9,27	2,15	9,08
V	A	11,3	19,68	8,38	11,64
	B	14,61	12,49	- 2,12	9,60
	C	18,54	15,54	- 3,0	5,4
Number of Clause Structure Types	A	12,6	16,5	3,9 (4)	
	B	11,6	13,2	1,6 (2)	
	C	13,3	12,4	-1,2 (-1)	

TABLE 25.2. STAGE V STRUCTURES

Struc- ture	Group	Pre- Interven tion	Post- Interven tion	Differ- ence	Standard Devia- tion
Co- ordinate Clause	A	49,99	31,53	-18,46	26,95
	B	53,84	61,05	+ 7,21	36,36
	C	62,99	60,78	- 2,22	34,78
Sub- ordinate Clause	A	16,24	42,41	+26,17	21,61
	B	25,53	12,05	-13,48	33,65
	C	23,23	25,03	+ 1,80	37,20
Post- modify- ing Clauses	A	4,76	6,05	+ 1,29	8,47
	B	0,62	6,89	+ 6,27	9,67
	C	3,88	4,18	+ 0,29	9,33

TABLE 25.3. PHRASE STRUCTURE (OTHER)

Stage	Group	Pre-Interven- tion	Post-Interven- tion	Differ- ences	Standard Devia- tion
II	A	34,05	37,35	+3,294	17,08
	B	41,88	38,48	-3,4	25,27
	C	29,4	38,39	+8,90	10,76
III	A	57,7	43,99	-13,77	28,01
	B	42,72	49,12	+ 6,399	20,87
	C	49,14	48,19	- 0,95	27,81
IV	A	7,47	14,95	+ 7,48	12,60
	B	13,19	10,10	- 3,09	10,94
	C	9,5	11,74	- 2,25	10,61
V	A	0	0,21	+ 0,21	0,66
	B	0,35	0,10	- 0,25	0,87
	C	0	0,41	+ 0,41	1,28
VI	A	0,7	3,33	+ 2,63	6,34
	B	1,83	2,18	+ 0,347	2,81
	C	1,86	1,26	- 0,605	2,44
Number Of Types	A	7,5	11,5	4	
	B	8,7	9,7	1	
	C	8,6	9,4	0	

TABLE 25.4. VERB PHASE

Verb Phrase Component	Group	Pre-Interven- tion	Post-Interven- tion	Differ- ences	Standard Devia- tion
VV	A	8,236	18,369	10,13	9,52
	B	7,188	8,305	1,12	5,80
	C	12,415	14,52	2,11	19,53
Vpart	A	9,195	10,48	1,29	13,98
	B	12,95	22,09	9,14	36,11
	C	9,033	11,11	2,07	11,57
Cop	A	19,871	14,703	- 5,17	25,99
	B	37,848	26,423	-11,43	30,12
	C	20,522	12,806	- 7,72	25,92
Auxm	A	2,029	7,85	+ 5,82	6,25
	B	4,696	3,357	- 1,34	10,9
	C	2,877	1,853	- 1,02	7,29
Auxo	A	45,932	40,109	- 5,82	32,66
	B	33,629	36,601	+ 2,97	19,48
	C	39,15	55,455	+16,3	21,28
NegV	A	4,733	7,591	+ 2,86	5,38
	B	2,786	3,219	+ 0,433	5,99
	C	6,001	4,261	- 1,74	6,67
Complex VP	A	0	8,375	8,38	7,06
	B	0	2,026	2,03	4,19
	C	0	4,96	4,96	7,9
Number of VP Types	A	4	7	3	
	B	4	4	0	
	C	4	5	1	

TABLE 25.5. WORD STRUCTURES

Word Structure	Group	Pre-Interven- tion	Post-Interven- tion	Differ- ence	Standard Devia- tion
ing	A	43,383	30,458	-12,925	18,03
	B	42,866	38,699	-4,167	20,63
	C	32,061	44,457	+12,39	34,99
pl	A	9,205	21,695	+12,49	23,74
	B	22,183	14,501	-7,682	17,18
	C	17,544	15,062	-2,482	10,46
-ed	A	10,49	14,562	+4,072	20,28
	B	7,031	12,755	+5,724	14,91
	C	9,891	6,458	-3,433	14,83
-en	A	0	0,93	+0,93	1,83
	B	0,256	0	-0,256	0,81
	C	0,114	0	-0,114	0,36
3s	A	11,67	5,304	-6,366	9,81
	B	2,478	4,66	+2,182	6,12
	C	8,016	8,744	+0,728	12,93
gen	A	2,204	1,23	-0,974	4,21
	B	0,256	2,275	2,019	6,17
	C	3,241	2,388	-0,853	5,21
n't	A	2,46	5,657	+3,19	5,03
	B	2,957	1,256	-1,701	5,55
	C	3,319	5,863	+2,544	9,91
'cop	A	6,718	4,909	-1,809	4,02
	B	6,132	14,578	+8,446	15,45
	C	3,835	2,257	-1,578	5,90
'aux	A	13,077	15,067	+1,99	13,17
	B	15,585	10,933	-4,652	10,69
	C	11,98	14,557	2,577	13,01
-est/-er/ ly	A	0,792	0,189	-0,603	1,57
	B	0	0,513	+0,513	0,83
	C	0	0,217	0,217	0,69
Number of Word Structure Types Used	A	6	7	+1	
	B	5	5	0	
	C	5	5	0	

TABLE 25.6. SUMMARY DATA

Measure	Group	Pre-Intervention	Post-Intervention	Difference	Standard Deviation
Mean Sentence Length	A	4,83	6,26	1,43	1,59
	B	4,23	4,48	0,25	2,61
	C	4,82	5,69	0,873	1,18
Mean Number of Sentences per turn	A	1,12	2,38	1,25	1,49
	B	1,23	1,54	0,32	0,69
	C	1,36	1,39	0,04	0,32
Ratio of Spontaneous Utterances to Responses	A	0,851	1,725	0,874	2,03
	B	0,514	0,843	0,329	0,68
	C	0,867	0,759	-0,108	0,99
Normal to Abnormal Response Ratio	A	4,859	6,46	1,601	6,35
	B	9,491	9,336	-0,155	10,24
	C	6,423	5,24	-1,183	9,75

TABLE 25.7. ERROR SCORES

Error Type	Group	Pre-Intervention	Post-Intervention	Difference	Standard Deviation
Concord	A	3,645	4,375	+0,73	7,89
	B	3,089	3,418	+0,33	4,18
	C	4,243	4,777	+0,534	5,843
Determiner Errors	A	16,754	8,251	-8,503	34,60
	B	12,023	6,967	-5,056	20,59
	C	17,415	10,04	-7,375	18,90
Preposition Errors	A	12,575	16,55	+3,975	32,42
	B	32,44	19,535	-12,90	41,96
	C	18,58	17,879	-0,707	14,79
Pronoun Errors	A	6,773	3,963	-2,81	5,41
	B	5,227	3,425	-1,80	6,46
	C	10,38	4,356	-6,024	13,90
Auxiliary Errors	A	7,642	22,609	14,967	27,17
	B	5,186	15,094	9,908	32,48
	C	13,156	15,125	1,969	26,52

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