CHAPTER 5

RESEARCH DESIGN AND METHOD

AIM:
To detail how, on the grounds of ethical principles, the researcher conceptualized the research design, selected participants, collected and processed data, and endeavoured to ensure that the research results would be dependable.

5.1 Introduction

Collaborative teams of speech-language therapists and teachers in multilingual South African pre-schools face a unique challenge, because their situation is complicated by many factors: the diverse language backgrounds of learners, teachers and therapists alike, the under-provision of services, the miscellaneous possibilities relating to teacher training, and lastly but very significantly, the dearth of information concerning criteria for assessment of the young learners' communication behaviour (South African Speech Language and Hearing Association [SASLHA], 2003).

The challenge calls for an energetic response from both members of the team. Teachers need to identify their own needs and the needs of their learners relating specifically to the development of language skills for learning in these multilingual pre-schoolers. Speech-language therapists need to respond with activities designed to provide relevant data, and suggestions for the application of this information in the pre-school setting.

The speech-language therapy profession upholds the concept of research and clinical practice informing each other. Kamhi (1999) has exhorted researchers and clinicians to work together, not only to improve clinical practice through research, but also to make researchers more responsive to the needs of practitioners. The same would hold true for teaching practitioners. According to Kamhi (1999) speech-language clinicians are well qualified to evaluate the effectiveness of new approaches suggested by research findings, and are in fact becoming ever more critical of activities not grounded in research-proven evidence. This tendency is demonstrated in the choice of the theme for the 2005 annual convention of the American Speech Language and

Hearing Association (ASHA), namely *using evidence to support clinical practice* (American Speech-Language-Hearing Association [ASHA], 2005). There have also been some reports in the literature on successful collaborations between clinicians and researchers, specifically between school-based speech-language therapists and university-based researchers (Apel, Brown, Calvert, Paul, & Throneburg, 2002:6)

5.2 Conceptualisation of design and method

The researcher's orientation is optimally determined by the purpose of the study, that purpose then being matched with an approach encompassing the attributes most likely to accomplish it (Lazaraton, 1995). Research by speech-language professionals to provide information for the practice of speech-language therapy and its concomitant collaborative role is no longer regarded as biased research. It is now recognised that there can be no value-free enquiry for the human disciplines (Denzin & Lincoln, 2000:19), and although research is always guided by values not unique to the investigator, it is demanded of researchers in the field of human behaviour to state their orientation and background in order to indicate how their work has been shaped by their previous activities (Denzin & Lincoln, 2000:62, 123).

The current study, conducted specifically with the collaborative teams of speech-language therapists and teachers in multilingual South African pre-schools in mind, adopts a post-modern stance in that it takes into account a multiplicity of perspectives (Weideman, 1999). The study is conducted first of all from a clinical and constructivist perspective.

Clinical refers to the affirmation of the researcher that the clinician (speech-language therapist) is seen to be a part of the support system for the educational practitioner (pre-school teacher). It is important also to state clearly that the clinical perspective ensures that *cultural differences in language behaviour* are differentiated from *language disorder.* This distinction was initially drawn by Taylor (1980), who pointed out that a communication disorder should be interpreted within a specific cultural framework, and that the study of normal and pathological communication should be couched in cultural terms, ensuring a culturally and linguistically valid diagnosis. The

profile of EAL characteristics to be constructed will be aimed at investigating the utility of such an instrument in distinguishing between difference and disorder in a specific urban setting in South Africa.

Constructivist refers to the active construction of a relative reality (De Vos, 1998:240), that is, the reality of the language use of pre-schoolers relative to their school setting and their personal (language) setting. The active role of speech-language therapists in the prevention and therefore early identification of possible language learning disabilities, including reading disabilities (Catts, Fey, Zhang & Tomblin, 2001), places the focus of the study on the pre-school learner.

The proposed research activity is therefore to describe, to make judgments about and to interpret language data from pre-schoolers and to deliver utilisable outcomes for the collaborative practice between clinician and educational practitioner. The findings will not be obtained in a laboratory setting but through the process of typical interaction with participants in their natural setting. The interaction can be described as unobtrusive (Nunan, 1992:56) because no attempt is made to manipulate the performance of the participants in any way other than to provide the necessary setting and materials for eliciting language interaction. These activities appear to reflect some of the characteristics of an ethnographic approach to research in language learning (Nunan, 1992: 56), although this is not a purely ethnographic study adhering to the principles set forth in the literature (Fouché, in De Vos, Strydom, Fouché & Delport, 2002, pp 270 –277; Hammer, 1998). The approach adapted here does provide the justification, however, for the preference of the term *participants* rather than *subjects* to refer to the children who participated in the conversations with the research fieldworker, and also for the description of the research fieldworker as a participant.

Data generated by the research will be *descriptive* in character. The nature of the data, namely language data, as well as the application of the data, namely for practical clinical/educational purposes, together place the research in the domain of applied linguistics. The term "applied linguistics" refers to a broad range of activities which include solving language-related problems, and has been described recently as "a means to help solve specific problems in society" (Tucker, 2005). The researcher will

strive to propose an "imaginative solution" to a real language problem (Weideman, 1999:94). To this end, the researcher did not specify in advance what would count as significant in the data, but regarded all data as potentially of significance, and therefore those aspects that were *not* found to provide typical characteristics are included in the display and discussion of results. This descriptive study is purely an observational study of existing language behaviours in a circumscribed group of young children. It in no sense purports to put forward any explanation of these behaviours, nor to suggest any language policy for multilingual pre-schools other than a course of action for identifying strategic supportive activities intended to promote optimal language development in a specific setting.

Although the research project displays various characteristics related to qualitative methodology, as described above, a large portion of the data processing will employ descriptive quantitative procedures. Descriptive quantitative research is a research approach that involves the identification of the characteristics of an observed pre-existing phenomenon (Leedy & Ormrod, 2004:179), in this case, a set of existing language characteristics. As specified for this approach, no attempt has been made to change or modify the situation under investigation. This restriction applies equally in the case of an ethnographic attitude, which demonstrates the close relationship between some quantitative and qualitative approaches.

Cresswell (1994: 177-178) suggests the term "dominant-less dominant design" for research where both qualitative and quantitative concepts are utilised. In the case of the present research, the quantitative paradigm dominates overall, but in the discussion some qualitative descriptive procedures were considered appropriate. A *mixed quantitative-qualitative descriptive cross-sectional design* (Leedy & Ormrod, 2004:108) was therefore selected for this study. This non-experimental design allows the researcher to study a single group, which may consist of sub-groups, only once (Fouché & De Vos, in De Vos *et al.*, 2002:140). People in various age groups are typically compared, making it particularly appropriate for looking at developmental trends (Leedy & Ormrod, 2004:108).

A descriptive cross-sectional research design has been described as the most widely used design in the field of social research (De Vaus, 2001: 194). The descriptive nature of the design enables the researcher to compile a profile of the participants in a certain aspect. A profile provides an outline of a subject or a characterisation. The characteristics of the individual participants may then be combined to provide a typical profile of the group, as would demonstrably be appropriate for this study.

This particular design has several advantages as well as disadvantages. The main advantage of a cross-sectional study is that results can be obtained relatively quickly. The design is also cost-effective since one meeting can be scheduled with each participant, and since participants were in one location, several could be seen on one day. The added benefit is that transport costs are limited. The design renders descriptive data, which is necessary to compile an adequate communication profile. Another advantage is that this method is less intrusive in the lives of research participants since data gathering takes place at one time (De Vaus, 2001:194; Leedy & Ormrod, 2004:183). There was no repeated or prolonged disruption of the pre-school schedule and programme for any participant during data collection.

A disadvantage of a descriptive research design is that causation cannot be determined. Therefore, specific characteristics of the children cannot be ascribed to any particular circumstance relating to either the home or the school language setting. However, establishing the cause of particular phenomena in language behaviour is not the purpose of the present research. The focus is to suggest a typical language profile for a group of children in a general pre-school setting.

As there are more advantages attributed to this research design than disadvantages, it seems appropriate for describing in depth the distinctive typical communication functioning of a group of young urban EAL learners. Data collection methods that can be utilized within the boundaries of a descriptive research design are observational assessment of behaviour and a structured or semi-structured interview (Leedy & Ormrod, 2004:179).

A semi-structured face-to-face interview is an interview in which the researcher asks a standard set of questions with one or more individually tailored questions to probe a person's reasoning. For the purpose of this study, a conversation with a young child using a specific set of materials and questions to elicit language denotes a semi-structured interview.

A limitation of the interview as a tool for obtaining information is that participants may not be forthcoming with the relevant information sought by the researcher (De Vos, 1998:370). This was a possible limitation in the present study, as there was no guarantee that the participants displayed all of the language skills they have at their disposal. However, in the case of research on language development, the use of a focused method of elicitation (Nunan, 1992:137) increases the likelihood of obtaining a sample of the language items being investigated. A pre-planned set of elicitation activities were employed in this study.

Nunan (1992:150) points out that there is an inherent bias in the interview-type of elicitation technique for the collection of language data in particular, because of "… the asymmetrical relationship between participants – the interviewer has more power than the interviewee". This asymmetry affected the content as well as the structure of the language used by the interviewee. Although this may be regarded as a limitation of the study, it delivered a true reflection of the language used by the pre-schoolers in the learning context where the adult (teacher) is the main communication partner during classroom activities, especially in the case of learners with relatively little language ability (Owens, 1999).

The language data relevant in the present analysis, recorded at a specific section in time, was described and interpreted, bearing in mind the principle that the context in which behaviour, in this case communication, occurs, has a significant influence on that behaviour (Nelson, 1998:18). The description focused on the elicited communication behaviour of pre-schoolers in a South African multilingual school setting with an adult as communication partner, and the influence of both the nature of the conversation and the adult partner on the behaviour were regarded as significant factors to be accounted for in the interpretation. There was no attempt to specify in

advance what would count as "significant" in the data. All data was regarded as potentially of significance for the purpose of the development of a language profile (Nunan, 1992; Denzin & Lincoln, 2000).

In summary, it was envisaged that the outcome of the mixed quantitative-qualitative descriptive cross-sectional design (Leedy & Ormrod, 2004:108) selected for this study would be the description of a group language profile of EAL learners from a circumscribed multilingual urban South African context.

5.3 Research aims

The **main research aim** of this study was to *determine the feasibility of constructing a language profile for pre-school EAL learners in a circumscribed urban area*, in order to provide speech-language therapists and pre-school teachers in collaborative practice with a dual-purpose tool: an instrument for identifying those learners who are at risk for language impairment/language learning disabilities, and a means of obtaining guidelines for the development of an appropriate programme for facilitating language development. It is important to state at the outset of this discussion that the intention was not to collect the most comprehensive English language sample that could possibly be obtained from the participants. EAL learners obviously also use English (whether expressively or simply receptively) outside of the context of the pre-school, and with a variety of conversation partners. Such a divergent sample would not represent the reality of what a practising teacher-therapist team would typically have available. The purpose was to base the profile on language and communication information resembling the data predictably obtainable in the specified setting.

In order to achieve this aim, the following **objectives** were set:

1. To analyse selected aspects of English language data from a group of EAL pre-school learners in an urban setting in South Africa, relating to form, content and use.
2. To identify typical language behaviours, if any, to be included in a language profile for these specific EAL pre-schoolers.

3. To identify possible risk indicators for typical EAL learners in this particular context by comparing the constructed/created profile to the indicators for Specific Language Impairment found in the literature.
4. To compile a set of profiled indicators for Specific Language Impairment and Language Learning Disorder in young (pre-school) EAL learners in a specific urban setting in South Africa.

5.4 Ethical principles

Research conducted in the field of human behaviour (including communicative behaviour) is guided by ethics principles that set the keynote for the entire research process, from planning through implementing procedures to reporting and discussing the findings. The principles that directed the researcher's thoughts and actions are:

1. Respect for the dignity and autonomy of all persons
2. Beneficence (actively doing good) and non-malfeasance (doing no wrongful action, causing no harm)
3. Justice (regard for fulfillment of obligations)

(American Psychological Association, 2002; De Vos, 1998:23 – 34; Leedy & Ormrod, 2004:101-104; Weideman, 2005).).

The way in which these principles informed the methods and procedures of the present study is elucidated in the rest of this section.

The principle of respect dictated first of all that all the participants in the research project would participate voluntarily, that they would be assured of anonymity and of the confidentiality with which all data would be treated, and that they could withdraw from the research project at any time if they should wish to. To this end, the practice of obtaining informed consent was followed.

A letter (Appendix B) explaining the aim of the study and requesting permission to conduct the research was sent to the teachers and the parents of the pre-schoolers involved. Care was taken to use layperson terminology, in order to ensure that both teachers and parents would understand the researchers' intentions and the implications

of participation in the project. The letter through which informed consent was obtained served as a tool to remind the research team of their position and their accountability (Denzin & Lincoln, 2000: 113). The head of the schools that were approached as well as the teachers declared themselves willing and, in fact, eager to participate.

Consent was obtained from parents through mediation of the teachers, who conveyed the information verbally, based on the written document. Where so requested by the parents, the information was translated verbally. The teachers therefore acted as informed interpreters. This procedure was adopted for the following reasons: some parents are only marginally conversant in English, some are non-readers, and many parents do not personally visit the school premises regularly to bring their children to school or fetch them from school, with the result that the researchers could not contact these parents personally.

The potential pre-school participants in this study were informed of the proposed procedures and provided the choice to participate or not, as they wished (Leedy & Ormrod, 2004:101). Only those children who assented, by indicating that that they wished to interact with the researcher, were involved.

Furthermore, the participants and their parents, as well as the schools and the teachers, remain anonymous in the report. In this way confidentiality is ensured.

Lastly, parents and teachers were assured that the results of the research would be disseminated to the participating schools, and thence to the parents, in such a way that they would be freely available to anyone wishing to obtain the information. Ethical clearance was obtained from the Research Proposal and Ethics Committee of the Faculty of Humanities at the University of Pretoria (Appendix C) for these activities. It was stated clearly in the correspondence with teachers and parents that the results of the research would also be used in constructing screening instruments, support material and other clinical publications.

The principle of beneficence and non-malfeasance was upheld by ensuring that no school, teacher, parent, or pre-schooler incurred any negative/harmful effects from

either participating or not participating in the research. Care was taken that there would be no risk for the pre-schoolers in participating in this study, as they were not removed from their safe environment or singled out in any negative way. In addition, the ongoing monitoring of the research project by Kommunika (see Appendix A) ensured that the research was relevant for the setting for which it was designed, namely multilingual urban pre-schools in South Africa and specifically the unique South African collaborative teacher-therapist team.

The principle of justice is reflected in the inclusion and exclusion criteria of participants, which are described in section 5.6 below.

Application was made to the Research Proposal and Ethics Committee of the Faculty of Humanities at the University of Pretoria, and ethical clearance was obtained to carry out the research as proposed (see letter in Appendix C).

These procedures were considered highly relevant to the current study because of the inclusion of vulnerable participants. Young children and members of culturally and linguistically diverse groups are potentially exposed to exploitation and therefore need to be protected from malpractice, whether it be intentional or unintentional. For this reason particular care was taken to ensure that ethical principles were upheld.

5.5 Sampling plan

The notion of sampling is one of the most significant in the total research endeavour (De Vos *et al*., 2002: 197). Samples may be regarded as "population microcosms" (Leedy & Ormrod 2004: 199) and should be carefully planned to present a true picture of the research population. In conducting a descriptive study, the researcher wishes to determine *the nature of how things are* (Leedy & Ormrod 2004: 198). To achieve this end, the researcher needs to perform a process of constant comparison (De Vos *et al.*, 2002: 198) and to ensure that the sample includes cases that illustrate the available variety on variables, especially where smaller numbers are utilised (Denzin & Lincoln, 2000:370, 780).

EAL learners from pre-schools in a circumscribed urban area (Pretoria inner-city area) were participants in this study. These learners come from a variety of language backgrounds so that the data will not reflect any particular language influence. Since it would be neither practicable nor even possible to construct separate profiles for children from each conceivable language background, the multilingual pre-schoolers from one particular pre-school setting are regarded as a single population. The aim is precisely to determine the *common* language characteristics, if any, that are demonstrated by the multilingual EAL pre-schoolers. Such common features have been noted in the literature (Owens, 2001:433) but have not yet, as far as could be determined, been identified for any South African multilingual urban pre-school population. On the other hand, as a result of the multitude of factors impacting on childhood bilingualism or multilingualism (Hoff, 2005:337, 350-352), multilingual language development varies considerably in individual children, even if the specific languages they acquire happen to be the same. The implication, however, remains the same: the aim is to isolate any shared characteristics of language behaviour.

Since the participants were also selected to represent a specific section of the community (urban EAL pre-school learners), the selection process was mainly non-probability purposive sampling, with elements of representative sampling and systematic sampling with a random starting point (De Vos, 1998:198, 195 and 193).

1. The *sampling method* selected for this study was non-probability sampling, since there is no way of guaranteeing that each element of the EAL urban pre-school population will be represented in the sample (Leedy & Ormrod, 2004:206). Non-probability purposive sampling is a sampling method where the subjects are chosen with a particular purpose in mind (Leedy & Ormrod, 2004:206). In this case, the sample was selected according to the judgement of the researcher regarding the typical attributes of the population (De Vos, 1998:198), since the Sunnyside/Pretoria inner-city area was selected as representative of the multilingual population found in urban South Africa. In order to contain the present study within the boundaries of a realistic time frame, participants were selected from one demographically representative school.

2. *Representative sampling* was employed to ensure that the school selected from the Pretoria inner-city area had approximately the characteristics of the population relevant to this research (De Vos, 1998:193). These characteristics were:
3. The age range of the learners, namely, from four to seven years
4. The language profile of the school as a whole, namely, a multilingual profile representing at least 12 languages (compare Table 1.2, Chapter One)
5. The language of learning and teaching, which needed to be English.
6. *Systematic sampling*, which draws a portion of the population in such a way that each member has an equal chance of being selected (De Vos, 1998:193, 195, Fowler 1984:23, Fink 1995: 11), was used to select the individual children from the designated school. Through a process of simple systematic sampling with a random starting point (De Vos 1998:197), every third child on the school class lists was selected. Lists were treated in a continuous manner, to ensure that selection was truly random. In accordance with ethical guidelines, in addition to parental consent these children were offered the choice whether they wished to participate or not, and respected by asking them to give their assent. The procedure was continued until ten children from each of three age groups were enlisted as participants.

5.6 Sample profiles

The participants in this project were the research fieldworker, and the pre-schoolers in a multilingual urban setting.

The present study constitutes part of a long-term research project involving teachers and learners in multilingual pre-schools in the central urban districts of Pretoria, which is situated in the Gauteng province of South Africa. The inner-city area of Pretoria is a multilingual, multicultural geographical community with English as the common language of commerce and civic communication. The Kommunika research team

planned the comprehensive project[1], and the procedures were subsequently carried out by the research assistant as fieldworker.

5.6.1. Criteria for selection of participants

Research fieldworker

The research fieldworker who interacted with the pre-school participants is a qualified female speech-language therapist and audiologist registered with the Professional Board for Speech, Language and Hearing Professions, HPCSA. At the time of data collection, she had several years of experience as speech-language therapist in a multicultural pre-school for children with language and hearing disabilities, as private practitioner with the same population, and as private consultant for foundation phase teachers in multilingual schools in Pretoria. She was therefore considered an appropriate candidate for the task of conversing with EAL pre-schoolers.

The fieldworker was not from the same cultural group as the pre-school participants. The possible influence of this disparity on the language performance of the pre-schoolers was acknowledged, but considered an acceptable risk for two reasons. Firstly, the teachers in the pre-school are for the most part white females (Du Plessis & Naudé, 2003), so that we may presume that the children are accustomed to interacting in this kind of dyad. For the present, given the scarcity of speech-language therapists from diverse cultures in South Africa, cross-cultural communication is probably also widely characteristic of many interactions between speech-language therapists and EAL pre-schoolers. Secondly, during the extensive research in the years following Taylor's (1986) first contributions to sensitise clinicians to the significance of cultural variables in speech-language pathology, it was found that the attitudes and preferences of "middle stage" children (four to six years old) were not overtly affected by the examiner's race, and specifically that linguistic measures such as length of utterance and syntactic complexity were not influenced (Bountress, Bountress & Tonelson,

[1] The Kommunika project which involved a total of 464 pre-schoolers from 32 classes in various schools (Naudé, Meyer, de Jongh, & Du Plessis, 2000; Du Plessis & Naudé, 2003) is described briefly in Appendix A.

1988:48, 53). However, the potential influence of cultural disparity cannot be ignored. It will be treated as an inherent characteristic of all the results from this study.

For purposes of clarity and identification, the term "participant" will not be used when referring to the research fieldworker, but only when referring to the pre-school participants.

Pre-school participants

Four criteria were applied in the selection of pre-school participants.

Age

Typically, pre-schools in Pretoria admit children from the age of three up to the age of six years. Since preliminary observations revealed that most three-year-old EAL children produced a very limited range of language behaviour within the designated time limits when participating in the proposed activities, participants in the age group of four to six years were selected for the current study. This age range, sometimes referred to as the "middle stage", is grouped together in language development literature as representing a separate developmental phase (Nelson, 1998; Owens, 2001). Participants were therefore required to be between 4-0 (4 years 0 months) and 6-11 (6 years 11 months) of age.

Geographical area

The participants for the study were required to come from a circumscribed geographical area, the Pretoria inner-city area. Despite the general statement by Pickering *et al*. (1998) that children in South Africa (and in other developing countries) are placed at a high risk for communication delays as a result of factors relating to political, cultural, social, economic, linguistic and environmental conditions, they also point out that it is impossible to equate conditions in all South African contexts in this respect. The focus of the speech-language therapy profession is currently directed at *socially situated communication* (Duchan, 2000), which in its broadest sense involves determining and addressing the needs of individual communities, including geographical communities.

Multilingual setting

Participants were required to live and attend school in a multilingual environment, in accordance with the aim of the study. As illustrated in Table 1.2 (Chapter 1), the Pretoria inner-city area is a multilingual geographical community.

English as language of learning and teaching (LoLT)

All participants were required to be from pre-schools with English as language of learning and teaching, since the language profile will be constructed for English as additional language. English is the language of choice for education for many parents from various language backgrounds in South Africa (Working Group on Values in Education, 2000; Thorpe, 2002).

5.6.2. Procedure for selection of pre-school participants

Pre-schools in the Sunnyside/Pretoria inner-city area were approached in order to determine whether they would be interested in participating in the encompassing Kommunika research project (see Appendix A). All the school principals, speaking on behalf of themselves and their personnel, declared that they were eager to participate and willing to liaise with parents in order to request their permission for the participation of their children.

Letters written in English (Appendix B) were delivered to the schools explaining the nature, aims and proposed outcomes of the research project, as well as the rights of the participants. Since it was essential to ensure that parents had a full understanding of the proposed procedures in order for them to consider whether they wished to grant their consent (Leedy & Ormrod, 2004:101), a strategy was devised in collaboration with the teachers. Letters addressed to the parents, written in English and containing the relevant information, were delivered to the schools, to be distributed and explained to the parents by the teachers in order to ensure informed consent and thereby uphold the ethical principle of respect (Denzin & Lincoln, 2000: 113). This procedure was considered to be the most appropriate way for the following reasons:

1. English is the language of communication between the schools and the parents. All official communication (letters, forms etc.) is in English. Parents are therefore accustomed to receiving printed communication in English.
2. Teachers usually undertake to ensure that parents as far as possible understand the contents of such communications. They readily undertook to do the same for the research project.
3. Although not all parents are literate in English, they typically make use of the support system (teachers and other parents) available to them to inform themselves of the contents of official communication from the school, and therefore the same route was followed with regard to the letters in connection with the research project.

All the parents who received the letter completed and returned the consent form, indicating that they were willing to have their children participate in the research. The high return rate was attributed to two factors: the teachers' enthusiasm to participate, and the trust placed by parents in the beneficial outcome of the research.

In order to obtain a representative sample of children for the present study, a school representative of the population was selected and a sub-sample of learners was selected through the process described above.

5.6.3. Description of participants

The participants in this study were pre-school children aged between four and seven years. Although the gender of the participants was not taken into account, since there is no indication in the literature that this is a factor of importance in the general language profile of young children, an attempt was made to include an equal number of girls and boys.

The participants were divided into three age groups as follows in accordance with the class grouping in the pre-school:

4-0 years to 4-11 years – Junior group

5-0 years to 5-11 years – Middle group

6-0 years to 6-11 years – Senior group.

(A younger group, the reception class group aged 3-0 to 3-11 years, was not considered for the current research, since many of the children in this group were introduced to English for the first time upon entry into the pre-school and therefore could not be expected to converse in English).

These groups were retained for the purpose of the current research, mainly because one of the potential outcomes of the research could be a set of suggestions for classroom activities aimed at promoting the development of English as additional language (EAL) for these multilingual pre-schoolers.

The participants in the study are depicted in Table 5.1.

Table 5.1. Characteristics of participants (N= 30)

Age	Gender	N	Home languages*	LoLT
4-0 to 4-11 (Junior group)	M	4	Northern Sotho 2 Unknown 2	English
	F	6	Northern Sotho 2 Setswana 2 Zulu 1 Xitsonga 1	
		Total 10		
5-0 to 5-11 (Middle group)	M	5	Sesotho 2 Northern Sotho 3	English
	F	5	Setswana 2 Sesotho 3	
		Total 10		
6-0 to 6-11 (Senior group)	M	5	Setswana 4 Sesotho 1	English
	F	5	Sesotho 2 Zulu 1 IsiNdebele 1 Setswana 1 Northern Sotho 1	
		Total 10		

*The languages listed here include only the main language for each participant.

The fact that English is the language of learning and teaching in the pre-school implies that all the participants have English as additional language (EAL). The home languages of the participants are diverse, and many of them are from multilingual homes. In some cases, all the particulars concerning the home languages of a child were unknown to the teachers. Parents sometimes neglect to provide these particulars when they fill out school registration forms, or in many cases forms are filled out by non-family members because parents have low literacy levels. This situation is typical of the geographical area (Du Plessis & Naudé, 2003). For this reason, the sample may be regarded as representative of the multilingual pre-school population of the Pretoria inner-city area.

The number of participants (30) is relatively small, with only 10 children in each age group. The reason for the sample size is feasibility (De Vos *et al*., 2002:199). The comprehensive analyses conducted on the language data would make larger numbers prohibitive. Although smaller sample sizes can prevent excessive sensitivity by only identifying those features that are truly significant (De Vos *et al*., 2002:200), it is acknowledged that this number of participants renders no more than an indication of possible trends in a typical language profile.

5.7 Data collection methods and fieldwork practice

Data was collected in the natural setting for which the results were interpreted (De Vos, 1998: 80), namely the pre-school during the normal daily routine. The method of data collection most closely resembles the *interview* method (semi-structured interview), since language samples were collected during structured and semi-structured conversations with the individual learners.

These samples were collected during school hours, in the familiar school setting, using the same stimuli and activities. These stimuli and activities, though derived in part from language tests employed by speech-language therapists, were carefully selected to represent familiar pre-school equipment and events.

5.7.1. Apparatus, materials and data collection procedures

The materials and apparatus required varied according to the individual phases of the research.

Phase 1: Preparation of the language database

In this phase, a language sample was collected from the pre-school participants and subsequently transcribed. Elicitation materials were required to ensure that all participants had an equal opportunity to demonstrate their language skills, and to ensure that they had the opportunity to demonstrate all the required aspects of language behaviour.

Language output produced by the pre-school participants and also by the research assistant in conversation with the participants was recorded on an audio recorder (National RX-CS 700 2 way-4 speaker system with built-in microphone) and transcribed orthographically by hand.

The range of language behaviours elicited from the participants was wide but by no means comprehensive. Both speech-language therapists and teachers have come to recognise the multiplicity of talents that are needed to demonstrate what may be termed "situationally grounded communicative ability" (Duchan, 2000; Ratner, 2000). From the multitude of assessment possibilities, the researcher had to select those that would best fit the purpose of the study, namely those that would reflect the typical language behaviours a teacher-therapist team would be able to observe within a realistic time frame. The line of reasoning proposed by Conti-Ramsden & Crutchley (1997) was adopted:

> We thought it would be particularly useful to see how much information could be obtained from a single assessment session, such as would be feasible in a clinical setting. This ruled out lengthy procedures involving a number of sessions with each child. We chose breadth rather than depth of assessment… (Conti-Ramsden & Crutchley, 1997:767).

The range of behaviours selected for analysis will be discussed under *Data analysis procedures.* The materials selected in order to obtain a suitably representative sample of language and communication proficiency from the pre-schoolers are provided in Table 5.2.

Table 5.2. Materials used for eliciting a language and communication sample

Elicitation materials selected	Additional references	Utilization of materials	Justification for selection of materials
Strategies for evaluating and targeting pragmatic behaviours in young children (Creaghead, 1984).	Mattes & Omark, 1984: 80	-To elicit various pragmatic behaviours from the children	- All materials were developed specifically for use with young children. - All measures are widely available to speech-language therapists and teachers, and representative of the types of measures used in assessment of language and communication skills. The materials were not normed in South Africa, but no scores were computed, since the purpose was not to test but to obtain a sample of language behaviour representative of that typically available to a speech-language therapist in this multilingual pre-school setting (Conti-Ramsden & Crutchley, 1997:767). - The equipment required was of the kind with which pre-schoolers are familiar, viz. simple line drawings. The participants were therefore not likely to be so interested in the equipment that it presented an obstacle to eliciting verbal communication. - Although the materials were not developed for the South African context, the people, objects and actions depicted were judged by the research team of Kommunika (Appendix A) to be on the whole not unfamiliar to urban pre-schoolers. - The materials allowed the researcher to obtain samples of spontaneous conversation, connected discourse and specific pragmatic skills, as well as elicited samples of specific syntactic and morphological structures.
Subtest 9 – Grammatic Closure, from the Illinois Test of Psycholinguistic Abilities (ITPA) (rev. ed.) (Kirk, McCarthy & Kirk, 1968).	Crutchley, Botting & Conti-Ramsden, 1997: 269 Nelson, 1998: 333	-To elicit various morphological structures: prepositions, regular plurals, irregular plurals, and degrees of comparison.	
Conversational language sample: Semi-structured spontaneous and elicited conversation: - Picture stimulus: birthday party (MWM Program for Developing Language Abilities, Minskoff, Wiseman & Minskoff, 1972) - Conversational map to invite personal experience narrative: going to the doctor/ my pets	 Jordaan, 1993:94 Tönsing, 1998:18 Tönsing, 1998:17; Rollins, McCabe & Bliss, 2000.	-To obtain a sample of language, specifically morphosyntax and conversation skills, as comprehensive as possible in the specified setting. - -To elicit spontaneous conversation -To elicit spontaneous conversation and narrative discourse	
Picture sequence cards from the Kindergarten Language Screening Test, Second Edition (KLST-2) (Gauthier & Madison, 1998).	Nelson, 1998: 333 Jordaan, 1993: 94 Tönsing, 1998:18	-To elicit connected discourse on a specified topic, which makes the interpretation of the children's utterances simpler in cases where there are many idiosyncratic structures	

Phase 2: The language profiles

In order to construct a typical language profile for EAL pre-schoolers, the researcher employed descriptive statistics to facilitate the drawing of conclusions about data for a specific group of individuals, namely pre-school EAL learners, and to generalise the results to a larger population (Huysamen, 1998:4). A statistical tool was required to compute means, medians, and standard deviations. Microsoft Excel (from Microsoft Office 2000 Professional, copyright Microsoft Corporation) was utilized for this purpose.

Phase 3: Profiling Language Learning Disorders

This was a descriptive phase requiring no specific apparatus or materials other than the word processing capacities of Microsoft Word (from Microsoft Office 2000 Professional, copyright Microsoft Corporation).

5.7.2. Data gathering and data editing

As stated previously, the data used for this research consisted of English language samples and communicative behaviour elicited from multilingual pre-schoolers during interaction with an adult research fieldworker. The language and behaviour samples were selected from the data gathered for the Kommunika project (see 5.6). Data collection for the comprehensive Kommunika project was carried out according to the schedule depicted in Figure 5.1.

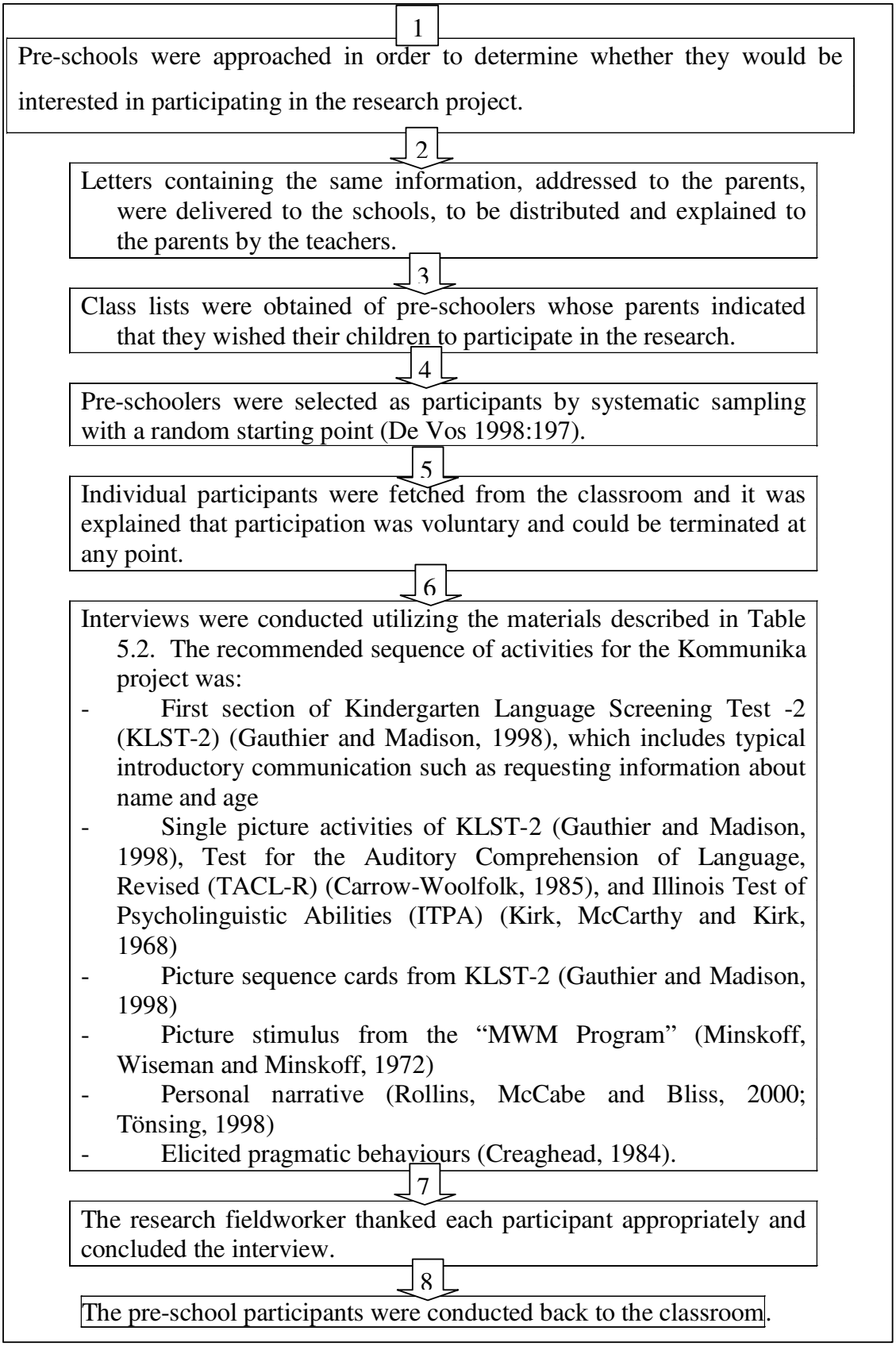


Figure 5.1. Data collection for Kommunika project

Data gathered through the TACL-R (Carrow-Woolfolk, 1985) and certain sections of the KLST-2 were not utilised in the present study. The TACL-R is therefore omitted from Table 5.2. In view of the fact that the participants were of pre-school age and that the aim of the interview was to obtain a comprehensive language sample, it was recognised that this sequence might need to be adapted in minor details to suit the interaction styles and the requirements of individual participants. However, the full range of activities was carried out in all interviews.

It was also recognised, as explained previously, that the materials and procedures were not developed to be specifically applicable to the South African context and that EAL pre-schoolers may be subjected to bias if they were to be compared to the population for which these materials and procedures were originally developed. However, no such comparison was carried out and the participants were only described relative to each other, with each age group (4-0 to 4-11, 5-0 to 5-11, 6-0 to 6-11) of ten participants serving as the comparative peer group.

As noted before, the data was collected from the participants using three strategies:

1. Semi-structured spontaneous and elicited conversation with an adult
    a. elicited with the aid of a visual stimulus (single pictures)
    b. structured around a topic involving personal experience.
    c. The procedures followed for the elicited conversation appear in Table below.
2. Communication activities structured according to a specific protocol (Creaghead, 1984) designed to elicit a variety of pragmatic behaviours
    a. communicative intentions/language functions
    b. conversation skills
3. Responses to test items designed to elicit specific expressive language behaviours

a. Kindergarten Language Screening Test – Second Edition (KLST-2) (Gauthier & Madison, 1983). This tool enabled the researcher to obtain a sample of the children's ability to produce discourse on a specified topic, which makes the interpretation of the children's utterances simpler in cases where there are many idiosyncratic syntactic structures.
b. Subtest 9 – Grammatic Closure, from the Illinois Test of Psycholinguistic Abilities (ITPA) (revised edition) (Kirk, McCarthy and Kirk, 1968). This subtest was employed to enable the researcher to elicit various morphological structures.

Table 5.3. Procedures followed for eliciting conversation.

Conversation elicited and facilitated by *picture stimulus* from the "MWM Program" (Minskoff, Wiseman & Minskoff, 1972)	**Conversation elicited and facilitated by the conversational map of *personal narrative prompts* as described by Tönsing (1998:17).**
The picture was introduced to each pre-school participant with the phrase: "What's happening here?". From this point onward, the research assistant followed the child's lead in the conversation, making use of questions and prompts like the following when necessary: What's happening here? What's happening on this picture? What do you see on this picture? What else is happening? What's going to happen? Tell me more Tell me about it Why are they all together here? What are they doing at this party? What are they going to do now? These questions and prompts are of the type generally employed by clinicians to avoid single-word responses from young children. If the birthday party picture (Minskoff, Wiseman & Minskoff, 1972) failed to elicit responses, a second picture was used (people walking in the rain).	Example of conversational map used to elicit personal narrative (based on recommendations by McCabe & Rollins, 1994) ***1. Doctor.*** The other day I had a terrible cold. I was coughing all the time. So I had to go to the doctor *-Have you ever been to the doctor?* *- Tell me about it.* While I was sitting in the waiting room, a little boy called Alex came in with his mom. Alex was crying, and I saw that his thumb was red and swollen. Do you know what had happened? Alex's big brother had stepped on his thumb with his big boot! The two of them had been fighting. *- Do you have a brother or a sister?* *- Can you remember a time when you had a fight with him/her/them?* *- Tell me about it.* The doctor looked at Alex's thumb and then he sent him and his mom off to hospital to have X-rays done of his thumb, to see if the thumb was broken. *-Have you ever had X-rays?/Have you ever been to hospital?* *- Tell me about it.* When Alex and his mom came back from the hospital, the doctor looked at the X-rays. Luckily Alex's thumb was not broken. The doctor only put a big bandage on and gave Alex some pink medicine for the pain. *- Did you ever have to have a bandage/medicine?* *- Tell me about it.* (During the narrative elicitation procedure, the researcher was responsive but avoided leading the child through the narrative. Relatively neutral

	prompts such as "uh huh" or "then what happened?" were used as suggested by Rollins *et al.,* 2000:227). ***Additional map:*** ***Pets***

In addition to the information specified by the individual elicitation tools, each strategy also provided data relating to the following general skills:

a. responding to various discourse tactics employed by the adult
b. ability to answer different types of questions.

1. For category (a) (Conversation), the verbal and non-verbal output of both participants (adult and EAL pre-school learner) was transcribed manually, according to the procedures described in Table 5.4 below.
2. For category (b) (Pragmatic behaviours), the specified behaviours indicated on the protocol were noted as *observed* or *not observed.*
3. For category (c) (test items) the elicited responses of the EAL learners were noted, together with any additional comments on communicative behaviours observed by the adult.

These transcripts and notes together were regarded as the source of raw data to be used for analysis and interpretation.

Table 5.4. Transcription of conversations between research assistant and pre-school participants.

Transcription procedures	Guidelines followed during transcription	Additional notes
Conversations were recorded on audiotape and transcribed as soon after recording as possible (Owens, 1999:137) but within a period of two weeks. Transcriptions were prepared by the research assistant, with random samples (25% of the total samples) transcribed independently by the researcher. These second transcriptions were then compared to the original transcriptions, to check for discrepancies. Because the language sample was to a large extent defined by the pre-designed structure, the accuracy of the transcripts was expected to be high (Owens, 2001:446). The few discrepancies that did arise, as well as any sections where the research assistant was unsure of a child's utterance, were discussed and resolved (Owens, 2001:446).	1. If the transcribers were not sure whether a word or segment of word was uttered or not, it was not included in the transcription. 2. If unintelligible utterances occurred, they were transcribed as (…) in the text. 3. Incomplete utterances were transcribed as ending in … 4. Pauses within utterance (uninterrupted intonation pattern) were transcribed as "…" (*utterance section 1* **…** *utterance section 2).* 5. Responses that could be classified as deviant on the grounds of either syntax or content were transcribed and analysed as far as possible for syntactic structures and morphology. 6. Use of punctuation marks: if normal statement intonation, end of utterance segment is indicated with full stop (.). Pause for breathing or transition within utterance is indicated by comma (,). Normal question intonation is indicated by question mark (?). 7. "Going to the doctor" conversation was always preceded by the standard introductory story prompt. This introduction was not included in the transcripts and analyses. 8. If the stimulus produced by the research assistant consisted of two separate sentences according to syntax and/or intonation pattern but there was no pause separating the two clauses, the two stimulus sentences were transcribed as one stimulus. The justification for this decision is that no time was allowed for child to respond, consequently the total utterance acted as one stimulus.	1. Stimuli from the research assistant reproduced in the transcription may sometimes seem not to be contingent/ consequential to the child's utterance. This is because of intervening sections of pre-set stimulus narrative, which occurred in the conversation but was not transcribed in the text. If the stimulus consisted of two separate sentences according to syntax and/or intonation pattern, but there was no pause separating the two clauses, the two stimulus sentences were transcribed as one stimulus since no time was allowed for the child to respond in between. 2. The layout of the transcriptions followed in broad outline the format suggested by Crystal, Garman & Fletcher (1989) and also by Owens (1999:139), with the addition of a column for indicating the type of stimulus provided by the adult as well as the type of response offered by the pre-school participant. Examples of the transcriptions appear in Appendix D.

5.8 Data analysis procedures

Analysis of data involves "breaking up" the data into manageable themes, patterns, trends and relationships (Mouton, 2003: 108).

The language data was analysed in order to obtain as much information as possible regarding the patterns and trends in the language profile of the population represented by the pre-school participants included in the survey. Data analysis was conducted in phases according to the research design as explained below.

Phase 1. Preparation of the language database

Aspects of the pre-school participants' *expressive language behaviour* were analysed and described. Although comprehension and production are both significant for a description of a person's total language behaviour (Crystal, 1979:7ff), comprehension was not included in the present analysis. Comprehension is often very difficult to determine with any measure of certainty, especially during language sampling through conversation. Various factors such as chance inattention, non-verbal clues, and cultural constraints are often noted in clinical practice as aspects that reduce the reliability of judgements concerning language comprehension. It appears that language tests, on the other hand, can more readily test comprehension than production, because a less challenging response is required for the receptive items than for the expressive items. It is acknowledged that limiting the profile to expressive language results in the constraint that what the profile displays is ultimately *language usage* and not *language ability,* which may be more adequately reflected in receptive language performance (Crystal, 1979:7).

The norms as prescribed by the various individual tests designated as elicitation materials were not utilized in this analysis, since the tests were not employed for their original purpose and not all the tests were carried out in the exact prescribed format, in that not all the sections of each instrument were included. In addition, these norms have not been obtained for the South African population and are

therefore not necessarily applicable to the participants in this study (South African Speech Language and Hearing Association [SASLHA] 2003). Even the sections of tests, for example, Subtest 9 – Grammatic Closure, from the Illinois Test of Psycholinguistic Abilities (ITPA) (revised edition), (Kirk, McCarthy & Kirk, 1968), would not have norms that could be utilised in a multilingual South African pre-school context.

The aspects of language included for analysis incorporate aspects of *language form* (excluding phonology), *language content* and *language use* (Bloom & Lahey, 1978) in the analysis (Owens, 2001). The aspect of phonology was not included in the analysis, since a phonemic analysis would require sophisticated electronic equipment for both the recording and analysis. In addition, the literature gives no indication that phonology may be a specific indicator of language disorder in children speaking a variant of English. In a study of multilingual children with specific language impairment it was reported that phonological problems were specifically not observed for this group of children (Crutchley, Botting & Conti-Ramsden, 1997:269; see Table 2.1, Chapter 2). Dialectical differences in the production of the sounds of English have been noted for non-first-language English speakers (Owens, 1999: 106), but is viewed to be part of language *difference* rather than an indication of *deviance.*

Metalinguistic skills were not included, on the grounds of the age of the participants (Owens, 1999: 329). Furthermore, para- and nonlinguistic skills were also excluded because of the practical difficulties in transcribing these aspects.

The language sample obtained from each pre-school participant during the conversation (Table 5.2) and from item 17 (picture sequence cards) of the KLST-2 (Gauthier & Madison, 1998), together with the responses to Subtest 9 – Grammatic Closure, from the Illinois Test of Psycholinguistic Abilities (ITPA) (rev. ed.) (Kirk, McCarthy & Kirk, 1968) was regarded as the *total language sample for analysis* and was analysed to obtain information on the language dimensions of form, content, and use.

Details of the analysis procedures for the separate components of each dimension that were identified as significant in Chapter 4 are set out in Tables 5.5a to 5.5c.

Table 5.5a. Analysis procedures for the separate components of the three language dimensions – A: Language form

Dimension of language and components selected	**Notes**	**Method of analysis**
Language form – general considerations	Language samples were collected from the pre-school participants as described in section 5.7.2. Checklists and elicitation tasks were considered less suitable than language sample analysis for the assessment of language structure (Lund, 2000:267). There is no ideal length for a language sample, since sufficient length varies with the purpose of collection (Owens, 1999:136; Crystal, Garman & Fletcher, 1989:). Since the purpose of this research was to determine whether a typical language profile for pre-school multilingual EAL learners could be obtained from language samples collected within the time frame usually allocated for contact between a speech-language therapist and a pre-schooler, the length of the sample was determined as the *maximum number of utterances that could be obtained within this time frame.* On average 45 minutes was spent with each pre-school participant on all the activities listed in Figure 5.1, with approximately half of the time being taken up by the conversation elicited by the picture (MWM, Minskoff, Wiseman & Minskoff, 1972) and the conversational map (Tönsing, 1998). It is therefore acceptable that the time frame for the conversation was approximately 20 minutes.	FOR "SYNTACTIC STRUCTURES" The transcribed language samples were processed in the following way for each pre-school participant. *Clause level – sentence structure of each clause* 1. Identify clause level structures in each sentence Count frequency of occurrence for each structure *Phrase level – structure of noun and verb phrases* 1. Identify noun phrase structures Identify verb phrase structures Describe irregular phrase structures Count frequency of occurrence for both regular and irregular phrase structures *Word level – morphological structures* 1 Identify morphological structures in noun phrases 2 Identify morphological structures in verb phrases 3 Describe regular and irregular morphological structures For this analysis, complex sentences were analysed separately. In addition, every component clause was also treated as a separate unit, even though it may have been part of a multiclausal unit.

Dimension of language and components selected		**Notes**	**Method of analysis**
	Syntactic complexity	*Syntactic complexity* was defined as the *frequencies of simple, compound and complex sentences* produced by each pre-school participant. Data was obtained from two sources for each participant, namely from the elicited conversation and from narrative elicited by means of the picture sequence cards from the KLST-2 (Gauthier & Madison, 1998). The classification of "and" as coordinating conjunction can be problematic, since children at an early stage of language development tend to over-use "and" as connective (Crystal, 1979:89). For this reason, "and" is often treated separately from	The transcribed language samples were processed for each pre-school participant to determine the frequencies of simple and complex sentences per subject. After the analysis of utterances on sentence level, the processing procedure was as follows: Exclude minor utterances (e.g. social expressions), phrase utterances, and one-word utterances. *Verb* alone was only regarded as a clause if it was a command. Utterances consisting of VX (*verb* + one other word/phrase structure) were classified as clause/sentence. Count the frequency of occurrence for simple sentences Count the frequency of occurrence for each type of compound sentence occurring in the language sample. Count the frequency of occurrence for each type of complex sentence occurring in the language sample. After the number of simple, compound, and complex sentences produced by each participant had been counted, the resulting tables of numbers were scrutinised to determine the number of participants in each age group who produced two or more examples of each sentence type. In the present analysis, when the child's intonation pattern indicated termination of the previous utterance, a clause/sentence starting with "and" was not counted as connected to the previous clause. In such cases, "and" was considered to have a temporal rather than a conjoining function (Owens, 2001: 338). With regard to "and/and then" strings of more than two clauses without intonational division, such a string of clauses connected with

Dimension of language and components selected	**Notes**	**Method of analysis**
	other coordinating conjunctions (e.g. Crystal, Garman & Fletcher, 1989; Owens, 2001:338).	"and/and then" was counted as *one example* of this type of connectivity while the clauses included in the string were not counted separately.
Syntactic structures	*Syntactic structures* refer to units such as phrases, clauses and sentences and the way they are organised (Crystal, 1981:98; Owens, 2001:19). The sentence is the main unit of syntactic organisation, and the approach used in the present analyses operates with two main levels between sentence and word, namely clause level (units that can function on their own) and phrase level (the subject, verb, and object elements of the clause).	Example: "Can eat and drink and drink water and play and swing and do and play with the sand and anything" (participant 13, Middle group).
		In all other cases the various clauses contained within one sentence were counted separately.
		Example: "When my mommy is go, né,
		when she go and at work, né,
		I said: sister, I want food,
		and he give me food" (participant 25, Senior group).
Clause structures	The method of syntactic analysis followed in this study is based on the structural grammar implemented by Crystal, Garman and Fletcher (1987). This procedure is used both clinically and for research purposes and has the added advantage that it corresponds sufficiently with traditional grammar approaches to be accessible to most pre-school teachers. This is an important consideration when planning a collaborative approach.	
Phrase structures	***Phrase level structures*** Pronouns are included in this section, though analysed separately, since they are used in the place of a noun phrase and are also described under phrase structures in the LARSP (Crystal, Fletcher and Garman, 1989). For the purpose of this analysis, the two phrases *this one* and *that one,* as well as the words *this* and *that* when used in isolation, are counted as demonstrative pronouns.	

Dimension of language and components selected	**Notes**	**Method of analysis**
Morphology ***Verb morphology*** **Main verbs** **Bare stem** **Tense** **Person** **Auxiliary and copula**	Data for analysis of morphology was obtained from two sources: the conversational language sample elicited as described, and the responses of the pre-school participants to Subtest 9 – Grammatic Closure, from the Illinois Test of Psycholinguistic Abilities (ITPA) (rev. ed.) (Kirk, McCarthy & Kirk, 1968). Where relevant, the two data sources will be distinguished by referring to conversational sample and test sample. Inflections of nouns, verbs and pronouns were noted from both sources and counted for each participant individually. Subsequently, data was grouped for each age group and treated as categorical data.	*Analysis of lexical verbs* The first section of the analysis does not include auxiliaries or the copula, which are investigated in a separate analysis. Although the copula functions as main verb, the functions of the copula are treated separately, following the example of several authors e.g. Conti-Ramsden & Jones, 1997; Dixon, 1991; Crystal, Garman, & Fletcher, 1989. For each participant, the number of correct and incorrect forms produced for the following were counted: Bare stem Irregular past Past tense –ed 3rd singular s progressive –ing past participle (not when used as adjective) negative constructions *Analysis of auxiliary and copula*: All forms of copula *be* and auxiliary *be* were counted. Other auxiliary verbs used were also counted to obtain information on general use of auxiliaries. "Has got" was not noted as auxiliary

Dimension of language and components selected	**Notes**	**Method of analysis**
Noun morphology **Possessive form** **Plurals** **Morphological saturation**	Uninflected forms of nouns were not counted here, only instances of morphological inflection. Morphological saturation (MS) refers to the percentage of noun phrases in which the child correctly uses any morphological element when that element is obligatory. Data for this analysis was obtained from two sources: the conversational language sample and the responses of the pre-school participants to Subtest 9 – Grammatic Closure, from the Illinois Test of Psycholinguistic Abilities (ITPA) (rev. ed.) (Kirk, McCarthy & Kirk, 1968). Where relevant, the two data sources will be distinguished by referring to conversational sample and test sample. Possibilities: Saturated NP – marking compulsory: NP includes whatever marking necessary Saturated NP – marking not compulsory: NP consists of N/Pron Unsaturated NP – unspecified compulsory item omitted Incorrect marking present: e.g. a rabbits, my feets. A further possibility was noted in the conversational samples: Superfluous marking e.g. drinking the juice (no previous reference) (participant 16).	*Noun morphology*: MS is calculated as follows: total *Saturated NP – marking compulsory* and *Unsaturated NP*. Calculate *Saturated NP – marking compulsory* as a percentage of this total. Resumptive pronouns (as in "Me, I don't play") were not counted, and gender confusion in pronouns (as in "My sister, his here is sore") was ignored. Gender confusions were ignored, as well as non-typical determiners. These last two would in any case not influence the saturation count if they were noted as "incorrect". The same goes for incorrect preposition e.g. "in the floor". Consequently, the following were counted for computing morphological saturation: Saturated – marking compulsory Unsaturated – unspecified item omitted. MS was calculated as $\frac{\text{saturated – marking compulsory}}{\text{Saturated – marking compulsory + unsaturated}} \%$

Dimension of language and components selected	**Notes**	**Method of analysis**
Pronoun morphology **Resumptive pronouns** **Gender** **Case** ***Determiners and quantifiers***		For the test sample, morphological marking was regarded as compulsory if the test item demanded it, e.g. plural form in "here are two…." Regarding determiners: substitution of "the" for "a" was disregarded, the item was still counted as saturated. When "the" was inserted but not required, as in "they gave me the medicine" with no previous reference, it was regarded as superfluous marking and the item was not counted as saturated. Regarding pronouns: in keeping with other analyses for this study, the following were regarded as pronouns where they were used to represent nouns/refer to persons: another one, this one, that one, these. **Pronoun morphology** *This/this one* and *that/that one* were accepted as pronouns for this analysis on the grounds that these structures act as pronouns in the syntactic composition of the utterances The correctness of male/female forms were not considered for this analysis since morphology, not semantics, is the focus here Uninflected forms of pronouns were not counted. *Determiners and quantifiers* Conversational language samples obtained from the pre-school participants were scanned and the following were counted for each participant: Typical use of *the, a, an, that, this, another, other, some, which, count words*

Dimension of language and components selected		**Notes**	**Method of analysis**
			Overuse of determiners *Substitution of determiners* Instances of determiners omitted in obligatory contexts *Nonagreement* *"The" used as filler/substitute for other word type* The data was grouped for each of the three age groups and treated as categorical data.
	Mean length of utterance	Two sources of data were implemented in this section, namely from the language sample obtained during conversation, and from the language sample obtained during the picture sequence subtest of the KLST (Gauthier & Madison, 1998).	The coding system devised by the researcher for processing this data is displayed below.

Dimension of language and components selected	**Notes**	**Method of analysis**	
		MLU calculated in morphemes ***The following items were counted as separate morphemes:*** Word stem, that is, without pre- and suffixes, for example the verb stem *go*, noun stem *boy* Verb ending *-ing* Plural *s* except for words like *chips, sweeties, simbas* that were not encountered in the singular form 3rd person *s* ending for verb *gonna* = 2 morphemes, *gone* = 1 morpheme Negative verb ending *n't* Possessive *'s* Contracted *is ('s), am ('m), are ('re)* Contracted *has ('s), have ('ve)* Comparative *–er*, superlative *–est* Adverb form *–ly* (e.g. *nicely* = 2 morphemes) Verb past tense ending *-ed* Irregular plural and past forms are not counted as separate morphemes, for	**MLU calculated in words** ***The following procedures were adopted:*** All words are counted separately, excluding word repetitions. The contracted form of auxiliary verbs and copula is counted as a separate word (*he's* = 2 words) The negative form of auxiliary verbs is counted as one word (*don't* = 1 word).

Dimension of language and components selected	**Notes**	**Method of analysis**
		example, *children* = 1 morpheme, *went* = 1 morpheme. This is in accordance with regular practice on the grounds that children usually initially acquire these words as individual items and not as examples of plural or past tense rules applied.

Table 5.5b. Analysis procedures for the separate components of the three language dimensions – B: Language content

Dimension of language and components selected		Notes	Method of analysis
Content	**Verbs** **GAP verbs**	Although it has also been suggested that children with SLI may rely more heavily on General All-Purpose (GAP) verbs than typically developing children, research has not confirmed this suspicion. Children with SLI have been found to use similar numbers of GAP verbs as other other young children (Conti- Ramsden & Jones, 1997).	GAP verbs were identified as follows: Following TNV count, classify each lexical verb occurrence as GAP or non-GAP. Focus mainly on surface form of verb taking into consideration semantic (general all-purpose verbs), frequency (high freq forms) and phonological (monosyllabic) information.
	Cognitive state terms	A subjective observation of the language output of young EAL learners indicates apparent over-use of GAP verbs by this population. Especially since this characteristic may suggest to observers that a language impairment is present, the typical performance of young EAL learners in this regard needs to be documented as benchmark.One lexical field which begins to appear in the pre-school years and continues developing into the school years in young children with typical language, is the field relating to cognitive states and events. Cognitive states are expressed by verbs or predicates that refer directly or by implication to the knowledge state of the speaker, listener or third party, for example *know, pretend, think, understand* (Johnston, Miller & Tallal, 2001: 355). Between two and three years of age children begin to use terms such as *feel* and *look*, and somewhat later the terms *know, think, remember* emerge to express knowledge states. The meanings of these terms continue to expand and there is	Lists of GAPS used by children in other studies include: come, do, get, give, go, got, have, know, look, make, open, play, put, see, take, want. Cognitive state verbs were identified and counted for each participant

Dimension of language and components selected	Notes	Method of analysis
	analogous growth in preschoolers'	
	understanding of mental events (Johnston, Miller & Tallal, 2001: 350. When children with specific language impairment were matched to a group of children with normal (typical) language according to mental age, the children with SLI used significantly fewer cognitive state terms (Johnston, Miller & Tallal, 2001: 363). Language provides both the tools for representing mental events and the means to understand the thoughts of others. Language impairment, therefore, may affect the child's ability to conceptualise mental states, because it restricts the tools for reflection and analysis (Johnston, Miller & Tallal, 2001: 364 – 366).	
Word counts **Total number of words** TNW and TDW TTR **Verbs**TNV and TDV **Nouns** TNN	Total number of words (TNW) and Total number of different words (TDW). TDW & TNW are both regarded as excellent indicators of developmental progress (Miller, 1991, in Friel-Patti, DesBarres & Thibodeaux 2001). TDW is a measure of semantic diversity, whereas TNW is a more specific index of language proficiency. The TNW index is also a reflection of speaking rate and utterance formulation ability (Leadholm & Miller, 1992). These latter two aspects, however, will not be regarded as indicative in the case of young EAL learners and therefore are not further considered. The comparison of the TNW and TDW counts across the three age	The steps involved in obtaining the TNW, TDW and TTR for each participant are listed below. 1 Count number of words 2 List words alphabetically 3 For each alphabet category, list the entries in alphabetical order to check that no double entries were made 4 Count number of different words 5 Calculate TTR = TDW divided by TNW (Pan, 1994:33). 6 Total number of lexical verbs (TNV) and Total number of different verbs (TDV)

Dimension of language and components selected	Notes	Method of analysis
	groups, and also across the individual participants in the groups, should be interpreted against the background that the language samples used for the purpose were not strictly standardised as to the length of time allowed for gathering the sample (Owens, 1999:184) as well as the elicitation stimuli. In the present study, the elicitation process was maintained throughout, but the length of time that the pre-schoolers of different ages could be engaged in conversation differed. Consequently, the ratio of TDW to TNW was considered an appropriate additional measure for comparison (Pan, 1994:33; Rollins, 1994:373-407). Although this procedure has been questioned as quantitative measure, because it may vary with language sample size and for different settings (Owens, 1999:184), it allows for descriptive interpretation.	As in the case of the TNW and TDW counts, the steps listed below allowed the researcher to obtain the TNV and TDV for each participant. 1 Count number of verbs (excluding auxiliaries and copula) 2 List verbs alphabetically 3 For each alphabet category, list the entries in alphabetical order to check that no double entries were made 4 Count number of different verbs. Total number of nouns (TNN) The total number of nouns that each pre-school participant produced in the conversational language sample was counted.

Table 5.5c. Analysis procedures for the separate components of the three language dimensions – C: Language use

Dimension of language and components selected	Notes	Method of analysis
Variety of utterances produced	The responses obtained with the sequence cards of the Kindergarten Language Screening Test (KLST) (Gauthier & Madison, 1998), although producing examples of continuous language production, were not analysed in this section, because a preliminary scrutiny revealed that the use of the visual stimuli (sequence of pictures) seemed to predispose participants to produce one-word or brief phrase responses.	Analysis procedure followed *Note adult's turn (stimulus) as one of the following:* • Visual stimulus presented together with auditory stimulus Example: picture of birthday party The picture of the birthday party was presented as a part of the standard elicitation procedure. Additional pictures were used only in cases where participants produced very little spoken language and seemed more inclined to take part in a discussion focussed on a picture than in a purely verbal discussion with no use of visual stimuli. • Question/Command Example: 1) Why are they all together here? 2) Tell me more A list of questions and prompts was compiled as part of the standard elicitation procedure. However, additional or alternative questions were utilized as required in order to maintain the flow of conversation or to follow the child's lead in the conversation. The purpose of the elicitation procedure was not to obtain utterances on any specific topic, but to obtain a typical sample of the child's conversation with adults who speak English**.** • Response to child's utterance (follow-up, encouragement, acknowledgement of speaker) Example: 1) I wonder what's in there 2) Mmm-hmm

Dimension of language and components selected		Notes	Method of analysis
Use	**Types of utterances**		*Note child's turn (response) as one of the following*: In the examples provided here, the adult's contribution to the conversation is placed between brackets. • **SU = spontaneous initiating utterance** (initiating conversation or new topic) Example: Can I go to the toilet? • **VSR = response to visual stimulus** (only when the child reacted primarily to the visual stimulus. When the visual stimulus was accompanied by a verbal stimulus, the verbal stimulus was regarded as the dominant stimulus and child's response noted accordingly) Example: Is cake for this one • **QR/CR = response to question/ response to command** Example: 1) (Why did you need a plaster?) Because is sore 2) (Tell me about it) I went to the doctor
			• **Cf = confirmation of information requested** Example: (What are they doing here?) They? Eh – she invited them to her party. • **Sf = spontaneous follow-up by child of own response**, *with no pause long enough to indicate that adult turn was expected* Example: And someone is hitting other one. Don't hit other children. • **FR = follow-up response to adult's reaction**

Dimension of language and components selected	Notes	Method of analysis
		Example: The dog is trying to open the present (I wonder what's in there) Maybe a dog present • **ER = response to encouragement/ interjection/acknowledgement of speaker** Example: Going to cut the cake (uh huh) and eat it These two categories were grouped together as FR/ER mainly because of the low numbers of responses obtained in both categories. • **NR = no response after appropriate wait time by adult** If a respondent provided NR to stimulus items for more than two consecutive turns and the conversation on that topic was then terminated, these further NR turns were not analysed. A maximum of three consecutive NR turns was allowed at any point in the analysis. Count frequency of occurrence for each response type
Mazes	The term maze refers to any false starts, reformulations, revisions, repetitions, and filled pauses occurring in a speaker's utterances during conversational speech or production of narratives. Evidence suggests that children who produce a high frequency of utterances with mazes may be experiencing word-retrieval problems or utterance-formulation deficits. The number of utterances with mazes can be an indicator of this variable (Friel-Patti, DesBarres & Thibodeaux, 2001). It is necessary to determine the number of utterances with mazes to be expected from a typical (normal) group of young EAL speakers in order to distinguish between normal (typical) frequency and high frequency of mazes for this population.	The language data from the *conversational sample* was scanned to identify instances of the following behaviours: false starts, reformulations, revisions, repetitions, and filled pauses. The number of behaviours in each category was counted for each participant and subsequently calculated as a percentage of the total number of utterances for each participant. Mean percentages for all categories were calculated for the three age groups. The data was also treated as *categorical data*. The number of children in each age group who produced utterances with each type of maze was determined, as well as the number of children in each group who produced *more than one* utterance with each type of maze.

Dimension of language and components selected	Notes	Method of analysis
		Finally, the developmental trends, if any, were determined by comparing the results for the three age groups.
Discourse devices **Connectives** And (then, so) Other **Ellipsis**		1. Utterances to be analysed included only clause level utterances. Phrases, minor constructions (e.g. social expressions) and one word utterances were excluded. 2. V alone was only regarded as a clause if it is a command. 3. Utterances consisting of VX were classified as clause/sentence. 4. "And" as connective: when the intonation pattern indicated termination of the previous utterance, a clause/sentence starting with "and" was not counted as connected. 5. "And/and then" strings: a string of clauses connected with *and/and then* is counted as one example of this type of connectivity; the clauses included in the string are not counted separately. Example: "Can eat, and drink, and drink water and play and swing and do and play with the sand and anything" (13) 6. In all other cases the various clauses contained within one sentence are counted separately. Example: "When my mommy is go, né, when she go and at work, né, I said: sister, I want food, and he give me food" (25) Connective words were: Not counted as connective when appearing within a phrase section Counted separately when appearing within an utterance and when used

<table>
<tr><th colspan="2">Dimension of language and components selected</th><th>Notes</th><th colspan="3">Method of analysis</th></tr>
<tr><td></td><td></td><td></td><td colspan="3">as initial word of utterance (see transcription of utterances for division decisions).
And then, and so = and
So then, so when = so
Not counted: how many connectives per utterance</td></tr>
<tr><td></td><td>Communicative functions

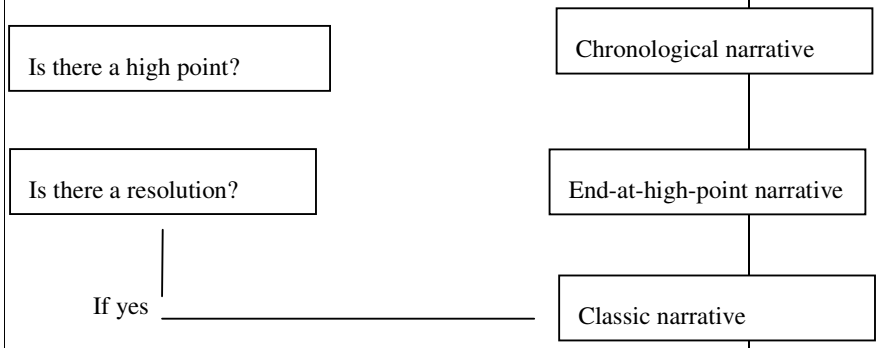
Intents and devices

Interpersonal and ideational functions</td><td>Data for this analysis were obtained from two sources: Creaghead's protocol (elicited according to the instructions provided by Creaghead, 1984) and the conversational sample, as advised by Hewitt (2000). All information was also analysed according to Halliday's classification as explained in Keshavarz (2001).
Creaghead's protocol lists two types of pragmatic behaviour:
• Communicative intents • Conversational devices
Halliday (in Keshavarz, 2001) proposed two main categories of functions:
• Interpersonal • Ideational
Interpersonal language defines the child's individuality, as well as social roles and relationships: ideational language represents the child's experience and interpretation of the world around and inside him or her (Keshavarz, 2001:188). Keshavarz (2001:190) found a decline in the relative frequency of interpersonal functions and gradually more frequent use of ideational language with age in the very first stages of language development. He also demonstrated that young bilingual children do not experience problems with the</td><td colspan="3"><table>
<tr><th>Main categories</th><th>Subcategories</th><th>Examples from Creaghead's (1984) protocol (and other)</th></tr>
<tr><td rowspan="11">Inter-personal</td><td rowspan="2">Instrumental</td><td>Request objects</td></tr>
<tr><td>Request action</td></tr>
<tr><td>Regulatory</td><td>(Directing)</td></tr>
<tr><td rowspan="5">Interactional</td><td>Greeting</td></tr>
<tr><td>Specifying a topic</td></tr>
<tr><td>Closing</td></tr>
<tr><td>Attending to speaker</td></tr>
<tr><td>Acknowledging speaker</td></tr>
<tr><td rowspan="3">Personal</td><td>Answering</td></tr>
<tr><td>Making choices</td></tr>
<tr><td>Expressing feelings</td></tr>
<tr><td rowspan="3">Ideational</td><td>Denial</td></tr>
<tr><td rowspan="2">Heuristic</td><td>Request information</td></tr>
<tr><td>Request clarification</td></tr>
<tr><td>Imaginative</td><td>Hypothesizing</td></tr>
</table></td></tr>
</table>

<table>
<tr><th colspan="2">Dimension of language and components selected</th><th>Notes</th><th>Method of analysis</th></tr>
<tr><td></td><td></td><td>expression of instrumental and regulatory (i.e. interpersonal) functions, but that they “may need more assistance with the development of functions such as imaginative and informative [ideational functions] as these require more linguistic sophistication” (Keshavarz, 2001: 192). In order to obtain guidelines for teachers, the presence of these tendencies in the data for the EAL pre-schoolers was investigated.
These two classifications were combined as indicated in the adjacent column.</td><td>
<table>
<tr><td></td><td></td><td>Predicting</td></tr>
<tr><td></td><td></td><td>(Fictionalising)</td></tr>
<tr><td></td><td>Informative</td><td>Providing information</td></tr>
<tr><td></td><td></td><td>Commenting</td></tr>
<tr><td></td><td></td><td>Describing event</td></tr>
<tr><td></td><td></td><td>Giving reasons</td></tr>
</table>
All communicative behaviours observed for each pre-school participant were classified according to the categories as stated. Data was then grouped for the three age groups and treated as categorical data.</td></tr>
<tr><td></td><td>Conversational skills
Repairing breakdowns</td><td></td><td>The conversational data for each participant was scanned and coded for the following behaviours: request for conversational repairs, repairs requested by the adult and provided by the child, and failure of the child to provide repairs requested by the adult. The total number of repair opportunities observed for each participant was also recorded. The data was subsequently treated as categorical data, to determine whether any noteworthy or typical behaviour could be identified.</td></tr>
<tr><td></td><td>Appropriateness of responses</td><td>During the conversation that was structured around the picture stimulus (Minskoff, Wiseman & Minskoff, 1972) and the conversational map (Rollins, McCabe & Bliss, 2000; Tönsing, 1998),</td><td>The responses elicited from the pre-school participants were classified as:
Appropriate</td></tr>
</table>

Dimension of language and components selected	Notes	Method of analysis
	the research assistant elicited conversational interaction from the pre-school participants by means of visual stimuli, topic introductions, questions, and comments. Their responses to questions and comments were examined to obtain an indication of the appropriateness of these responses.	Irrelevant/inappropriate Questionable No response The criteria applied followed the suggestions put forward by Blank, Rose & Berlin (1978). If a respondent provided NR to stimulus items for more than two consecutive turns and the conversation on that topic was then terminated, these NR turns were not analysed Spontaneous utterances and follow-up utterances were excluded from this analysis, since they cannot be classified as *responses* in the sense required here. Only those utterances that were produced in response to a stimulus were included. "No response" is counted on the grounds that it can be regarded as a refusal to respond.
Conversational turn-taking	Data concerning the responsivity to conversational partners typically displayed by EAL pre-schoolers will allow teachers and therapists to identify those children who are less responsive than their peers. The most significant information would pertain to interaction between child and adult, since this would be the context most easily observed by teachers and therapists in the pre-school setting.	An overview of the child's responsivity in conversation with a less familiar English-speaking adult was obtained by compiling a summary of the proportion of conversational turns provided by the adult that was taken up and not taken up by the child during the course of the semi-structured conversation. The proportion of verbal and non-verbal conversational moves made by the child was also investigated. In this section the following categories were included: • *Conversational turns taken/not taken* 1 Count number of conversational turns available to child

Dimension of language and components selected	Notes	Method of analysis
		2 Count number of turns taken 3 Count number of turns not taken • *Verbal and non-verbal moves* 1. Count number of moves made by child 2. Count number of verbal moves 3. Count number of non-verbal moves
Narratives **Picture sequence narratives** **High point analysis of personal narratives**	Narratives produced by the pre-school participants were of four types: 1. Personal narratives elicited by means of the conversational map proposed by Tönsing (1998) on the subject *Going to the doctor.* 2. Other personal narratives elicited by the adult during the course of the conversation 3. Spontaneous narratives that occurred during the conversation 4. Narratives elicited by means of the picture sequence cards as part of the KLST-2 (Gauthier & Madison, 1998). Not all participants produced all types of narratives. For each participant, the *longest personal narrative produced* was selected for analysis as suggested by Rollins *et al.* (2000:227. Rollins *et al*. (2000) propose a three-step process for narrative assessment.	If the answer to a question on the left hand side is *yes,* proceed to the next question. If the answer to a question is *no,* the narrative structure employed is indicated in the adjacent text box. Are there two past tense events? → One-event narrative Are there more than two past tense events? → Two-event narrative In the real world is there a logical or causal sequence to these events? → Miscellaneous narrative Does the narrator's order of the events mirror the sequence in which the events must have logically occurred? → Leap-frog narrative

Dimension of language and components selected	Notes	Method of analysis
	1. *Eliciting the narrative* Personal event narratives have been found the most appropriate for pre-school and early elementary school children (p 225). The adult-child dyad has in some cases proved to be the most fruitful setting for eliciting classic narratives (Rollins *et al*. 2000:226). A "conversational map" of story prompts (McCabe and Peterson, 1984) was used to elicit personal narratives from the pre-school participants. *2. Coding the narrative* The elicited and recorded narrative is transcribed with one clause on a line. Each clause of the narrative is the assigned with the appropriate element: orientation, action, evaluation, resolution, and coda. One clause may be multiply coded. Descriptions of these elements are provided in the Table *3. Scoring the narrative.* A series of questions guide the clinician to identify the type of narrative structures produced by the child	 Figure. Procedure to determine the type of narrative of which a child is capable.
		The steps proposed by Rollins *et al.* (2000) were followed for the analysis of the personal narratives. 1. The narratives were transcribed with one clause to a line. 2. Each clause was assigned with the appropriate element: orientation, action, evaluation, resolution, and coda. 3. A series of questions (see above) was asked to identify the narrative structures of which each participant was capable.

Dimension of language and components selected	Notes	Method of analysis
		Subsequently, a summary of the narrative structures found in each age group of the pre-school participants was scrutinised in order to determine whether any typical pattern emerged.

The data obtained from each pre-school participant was analysed in this way, and subsequently grouped with the data from the other nine participants in the applicable age group, as indicated in Table 5.1, namely Junior group (aged 4-0 to 4-11), Middle group (aged 5-0 to 5-11), or Senior group (aged 6-0 to 6-11). The data for each group was analysed from a dual perspective. From a quantitative perspective, descriptive statistics (Huysamen, 1998; Steyn, Smit, Du Toit & Strasheim, 1994) were employed in order to obtain information regarding typical language and communicative behaviours for each group. From a qualitative perspective, an adapted version of Cresswell's data analysis spiral (Cresswell, 1998:142-165; Leedy & Ormrod, 2004: 151) was utilised to ensure that all relevant aspects of the language and communication data had been observed and recorded. The adapted data analysis spiral, which encompassed phases 1, 2 and 3, is depicted in Figure 5.2 The repetitive application of this procedure ensured a measure of trustworthiness, as will be discussed under 5.9.

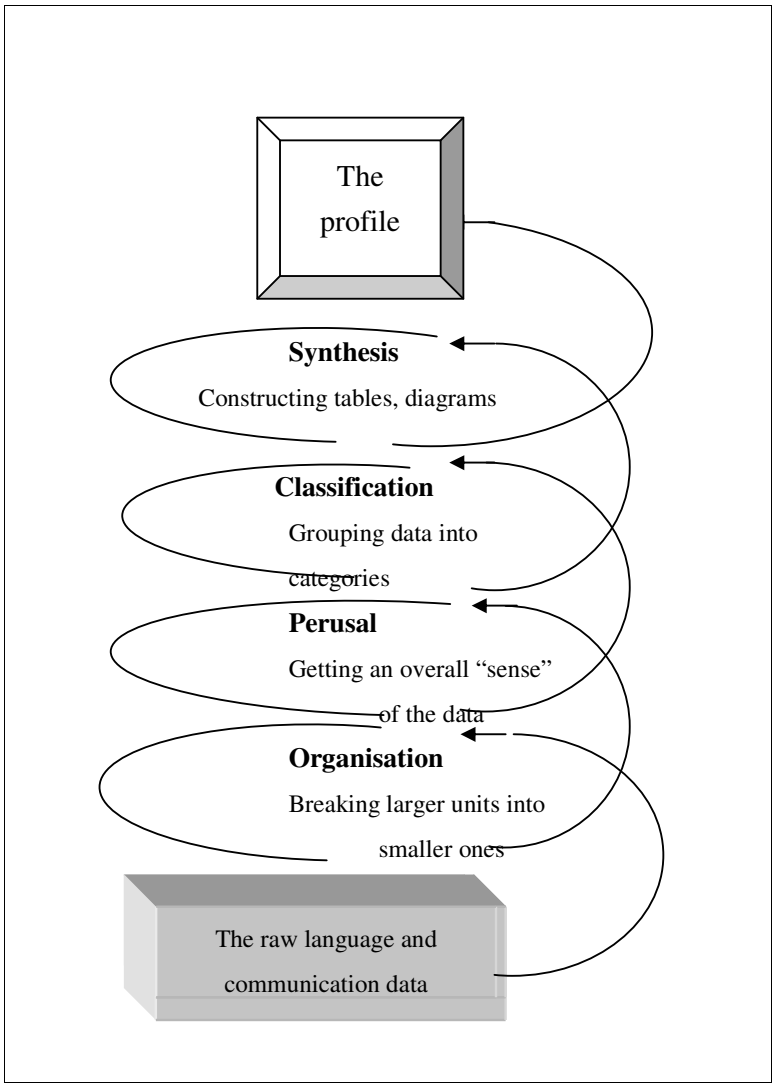


Figure 5.2. Data analysis spiral (adapted from Cresswell, 1998:142-165; Leedy & Ormrod, 2004:151)

Phase 2. The language profile

Language data obtained in phase one was scrutinised to determine trends and patterns. From these regularities the typical structures were identified in order to construct a profile of typical English language behaviour for EAL pre-schoolers.

The data obtained during phase 1 was mainly of two types:

1. *Categorical data*, with ordinal variables. This data described *phenomena that either occurred or did not occur*; for example with reference to complex syntax – did embedded clauses occur? Data analysis in this case involved counting the

number of individuals demonstrating a particular behaviour, as well as the number of times each individual demonstrated the behaviour. Although mean percentage of use per group has been used in other studies to describe the *use* of a specific structure (Johnson, Miller & Tallal, 2001), researchers like Balason and Dollaghan (2002:961) caution against this practice because a relatively small proportion of the subjects in a particular case may contribute to produce a high mean percentage. It is therefore advisable to obtain some indication of the number of participants per group who demonstrate the target behaviour. Schraeder, Quinn, Stockman and Miller (1999:198) regarded an item of communicative behaviour displayed by pre-schoolers as a communicative strength if it was observed at least once. However, since a single occurrence of any behaviour may be attributed to chance, *more than one* example was required in the present study in order to confirm that the individual does indeed demonstrate the behaviour. In accordance with Theakston, Lieven, Pine, and Rowland (2002:790) and also Johnson, Miller and Tallal (2001:360), therefore, children were assumed to be demonstrating a particular behaviour once they had produced two instances of that behaviour. For the purpose of this research, if more than 50% of a group demonstrated more than two instances of any behaviour, it was regarded as noteworthy behaviour for that group; if 80% or more demonstrated such behaviour, it was regarded as typical for that group. In the study by Theakston *et al*. (2002) only those language structures produced by at least 10 out of 11 children (90.9% of subjects) were regarded as sufficiently representative to be included in their analyses. However, if the original number of 12 subjects had been retained in that study, a representation of 10 out of 12 children would render 83.3%, which is close to the cut-off of 80% employed in the present study. Previous studies that examined only the so-called *errors* produced by young EAL speakers (for example Nxumalo, 1997) also reported the percentage of speakers in a group who produced a certain structure, but refrained from identifying noteworthy or typical behaviours. Descriptive statistics offer no norms for or methods of determining variables that will be implemented in categorising data (Ehlers, 2005; Huysamen, 1998:8). It is the task of the researcher to determine the nature of the variable *typical* versus *non-typical behaviour* in a particular group. For this purpose, the following categories were created and are

here stated clearly as values selected according to the discretion of the present researcher:

Category	*Percentage of group demonstrating behaviour*	*Interpretation*
1	< 50%	non-presenting/negligible
2	50%-79%	noteworthy
3	80%+	typical

2. *Quantitative data,* with discrete variables. This data described *phenomena that occurred in a certain measure,* for example mean length of utterance, or total number of verbs produced. Quantitative treatments of the data in this case included mean or median where applicable for each age group, standard deviation, and range of typical behaviour regarding the occurrence of specific language characteristics (De Vaus, 2001: 195; Crystal, 1987:90). The range of occurrence regarded as representative of the group was determined by implementing two standard deviations from the mean (Steyn, Smit, Du Toit & Strasheim, 1994: 138). This method could only be applied in the case of a normal distribution, or a distribution approaching a normal configuration. Where the distribution was skewed by a single very low and/or a single very high score, the 10^{th} and 90^{th} percentiles were used to delimit the range of behaviour displayed by 80% of a group of participants (Steyn, Smit, Du Toit & Strasheim, 1994:127).

Examples of corresponding quantitative treatment of similar data in the literature are scarce. In linguistically oriented studies of multilingual children in South Africa, the occurrence of language phenomena is often described qualitatively, without any quantitative indication of typical or non-typical behaviours (for example Stander, 2000). International studies comparing the language and communicative behaviour of children with language impairment on the one hand, to language and communicative behaviour of typically developing children on the other hand, define "typical behaviours" only with reference to *non*-typical behaviours, not according to any pre-specified norms (for example Leonard, Miller & Gerber, 1999; Bastiaanse & Bol, 2001; Johnston, Miller & Tallal, 2001; Conti-Ramsden & Windfuhr, 2002; Leonard,

Deevy, Miller, Rauf, Charest & Kurtz, 2003). The present study is not a comparative study, but an attempt to delineate those aspects of language and communicative behaviour that can be suggested as topics for comparative studies in the specific population under scrutiny. Future studies will have to affirm, or determine anew the accurate typical range of these behaviours.

Phase 3. Profiling language disorders and projected language learning disorders

A predominantly quantitative description of the data together with quantitative notes is provided in order to construct a meaningful language profile. The results are compared to other results found in the literature as a basis for suggesting indicators for specific language disability in the population (Owens, 1999; Owens, 2001; Craig & Washington, 2000; Crutchley *et al*., 1997; Catts, 1993; Catts *et al*., 2001).

5.9 Quality criteria

The value and utility of any research is directly related to the trustworthiness of the study. When quantitative measures are employed, the parameters of trustworthiness are validity and reliability (Leedy & Ormrod, 2004:27; De Vos *et al.,* 2002:166).

Validity refers to the extent to which an empirical measure adequately reflects the concept in question, and the extent to which the concept is measured accurately (De Vos *et al.,* 2002:166). Two types of validity can be described for the present study, namely content validity and construct validity.

Content validity implies that the items of the measurement instrument/s adequately reflect the content of the construct being investigated (De Vos *et al.,* 2002:167). Content validity was ensured by defining the specific construct being studied, and specifying the theoretical content area that it implies. Language was defined as consisting of form, content, and use (Bloom & Lahey, 1978), and the various aspects of each dimension were noted (Figure 1.4 in Chapter 1). The items relevant to the specific content areas were defined in Chapter 4, and representative items of each content area were selected on grounds explained in Chapter 4, relating to specific language impairment (SLI) and characteristics of EAL. The instruments utilised to

elicit the language behaviours that reflect these characteristics are widely accepted by speech-language professionals as valid measurements of the various aspects of the language dimensions of form, content, and use. The tests utilised (ITPA – Kirk *et al.,* 1968, and KLST-2 – Gauthier & Madison, 1998) have proven content validity as reported in the respective manuals.

Construct validity refers to the degree to which an instrument measures the theoretical construct it was intended to measure (Struwig & Stead, 2001:141). The descriptive measures employed in the present research project have all been validated through research reported in the literature, and references have been provided in each section of the discussion.

Reliability is "the consistency with which a measuring instrument yields a certain result when the entity being measured hasn't changed" (Leedy & Ormrod, 2004:29). In the present study, it was considered appropriate to obtain indications of inter-researcher reliability where two researchers were involved, and intra-researcher reliability where one researcher was involved. As described in section 5.8 (Data analysis - *phase 2*), the language samples elicited from pre-school participants were transcribed by hand. The transcribed language samples were analysed for syntactic structure by the research assistant. The researcher for the present study analysed 25% of the total transcripts, after which the two sets of analyses were compared to determine the measure of agreement between the analysers for the purpose of assuring validity. The method used to determine inter-researcher agreement is described in Appendix E. A total inter-researcher agreement of 98.1% was obtained.

Intra-analyser accuracy was monitored for analyses other than the syntactic analysis (word counts, conversational skill analysis, MLU, morphology, content aspects of verbs, variety of utterances produced, mazes, communicative functions, and high point analysis of personal narratives), which were conducted by one researcher (in this case not the field worker but the main researcher) only. All of these analyses were repeated at intervals of 6 months, and revised where any discrepancies occurred (3 revisions in all).

Nunan (1992) proposes that certain questions be asked regarding the validity and reliability of research concerning language. These questions are addressed in Table 5.6.

Table 5.6. Questions concerning reliability and validity of language-related research (Nunan, 1992: 61-63)

Measure of trustworthiness	Questions	Responses relating to current study
Internal reliability	Does the research utilize low inference descriptors?	Descriptors are observable linguistic phenomena and measurable behaviours
	Does the research invite peer examination or cross-site corroboration?	Sufficient primary data will be included in the report to be used for reanalysis by other researchers
External reliability	Does the researcher provide a detailed description of subjects?	Details of age range, demographic particulars and educational setting are provided
	Does the researcher provide a detailed description of the context and conditions under which the research was carried out?	Details are provided
	Are constructs and premises explicitly defined?	Constructs and premises are defined
	Are data collection and analysis methods presented in detail?	Yes, in tables and appendices
Internal validity	Is there bias in the selection of informants?	Selection procedures are specific but not biased
External validity	Are some phenomena unique to a particular group or site and therefore non-comparable?	Comparison to groups in other socio-cultural environments (e.g. rural, or mainly unilingual) in the current study is not envisaged
	Are outcomes due in part to the presence of the researcher?	The presence of the researcher is a necessary influence in order to obtain a sample of communication performance in the setting as described

The answers provided in Table 5.6 summarise the general considerations relating to quality criteria for this study.

5.10 Conclusion

The quantitative descriptive research design that was selected, together with the considerations deriving from the clinical and constructivist perspective, provided an appropriate framework for planning this research project. The data collection methods and fieldwork practice presented some challenges on account of both the complexity of the data to be collected and the characteristics of the context for data collection. However, the detailed account of all aspects of the data collection procedures allowed the researcher to plan for both of these potential problem areas.

5.11 Summary

This chapter described the research design and the methodology that was used to construct a profile of typical English language behaviour in a group of South African EAL pre-school learners. The objectives for realising the aims were detailed, as well as the phases of the study. Selection of participants, with reference to both the research fieldworker and the pre-school participants, as well as data collection and data processing were discussed.