Describing the spoken language skills of typically developing Afrikaans-speaking children using language sample analysis: a pilot study

by

Petria Liebenberg

(17008698)

A dissertation submitted in fulfilment of the degree MA (Speech-Language Pathology) in the Department of Speech-Language Pathology and Audiology

FACULTY OF HUMANITIES
UNIVERSITY OF PRETORIA

Supervisor: Prof Jeannie van der Linde
Co-supervisors: Prof Juan Bornman and Mrs Isabel Schimper

November 2021

DECLARATION OF ORIGINALITY UNIVERSITY OF PRETORIA

Student name: Petria Liebenberg
Student number: 17008698
Topic of work: Describing the spoken language skills of typically developing Afrikaans-speaking children using language sample analysis: a pilot study

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LIST OF ABBREVIATIONS

LSA	-	Language sample analysis
SLT/s	-	Speech-language therapist/s
LoLT	-	Language of learning and teaching
MLU	-	Mean length of utterance
TNW	-	Total number of words
NDW	-	Number of different words
TNU	-	Total number of utterances
ICC	-	Intraclass correlation coefficient
MATTR	-	Moving-average type token ratio
SES	-	Socioeconomic status
SUGAR	-	Sampling Utterances and Grammatical Analysis Revised
SALT	-	Systematic Analysis of Language Transcripts
APA	-	American Psychological Association
HL	-	Hearing loss
TALC	-	Tool for Analysing Language and Communication

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ABSTRACT

Language sample analysis is widely regarded as the gold standard of language assessment in multilingual contexts such as South Africa. However, the limited availability of developmental language data for Afrikaans and the uncertainty regarding the length of sample guidelines complicate its reliable use. The study aimed to provide guidelines on the length of sample necessary to yield a representative language sample and concurrently provide a preliminary description of the spoken language skills of Afrikaans-speaking children, using language sample analysis.

The study involved thirty typically developing Afrikaans-speaking children aged between 3;6 (years; months), and 9;6. A descriptive research design was used to transcribe and analyse one-hour interactions collected in natural environments of participants recruited using referral sampling. Video and audio recordings of the samples were transcribed using adapted SUGAR analysis procedures.

Results indicated that mean length of utterance in words, number of different words, and the total number of words stabilise at 30 minutes and no significant differences were found between 30 minutes and longer time segments. The morphosyntactic skill results compared well to existing guidelines. Lexical diversity results correlated with the findings of the lexical specificity and accuracy in the Prutting and Kirchner Pragmatic Protocol. The developmental trajectories for pragmatic and phonological development were consistent with existing guidelines.

The study concluded that 30-minute interactions provide a representative discourse sample for Afrikaans-speaking children who are between 3;6 and 9;6. It provides promising preliminary developmental data and clinical guidelines, confirming the potential of language sample analysis as a reliable component of language assessment in Afrikaans.

1. INTRODUCTION

Chapter aim:

This chapter provides background on current methods of language assessment in South Africa. It further provides an overview of current practices of language sample analysis and identifies the challenges and pitfalls in current language sample analysis guidelines. The rationale for developmental data in the Afrikaans-speaking population as well as language sample analysis guidelines are outlined.

Language assessment in multilingual contexts, such as South Africa, is challenging (Barratt et al., 2012; Bornman et al., 2018; Pascoe et al., 2013; Southwood & Van Dulm, 2015; Verdon et al., 2015). One of the main reasons is the lack of assessment materials for many of the South African languages and dialects, including Afrikaans (Southwood & Van Dulm, 2015). Alternatives, such as using translations of existing measures and developing new assessment tools have been explored (Bornman et al., 2018). However, translated and newly developed assessment materials may only be reliable if multiple factors, including cultural, linguistic, and socioeconomic factors are accounted for during a meticulous development process (Bornman et al., 2010; Romski et al., 2018; Southwood, 2013). It is therefore not surprising that this is a costly process (Southwood & Van Dulm, 2015) and unfortunately in South Africa, funding, human resources, and time needed to conduct large-sample studies for the adequate translation and development of assessment tools, are limited (Bornman et al., 2018; Marsh, 2010).

Afrikaans is the third-most widely spoken language in South Africa (Statistics South Africa, 2012) and is the second-most prevalent language of learning and teaching (LoLT) in single medium schools (South African Department of Basic Education, 2010; Wildsmith-Cromarty & Balfour, 2019). It is therefore alarming that only a few language assessment instruments and methods have been developed for Afrikaans-speaking children giving rise to the commonly used alternative practice of relying on translated assessment tools that are not re-normed for Afrikaans-speaking children (Southwood, 2013). When assessment tools are not normed for the population being assessed, inaccurate findings may be used to recommend interventions and referrals (Mdlalo et al., 2019). Despite the obvious pitfalls and

dangers of using inappropriate language assessment measures (Southwood & Van Dulm, 2015), a large population of Afrikaans-speaking preschool children's spoken language skills are assessed using unvalidated measures (Southwood, 2005) in the absence of reliable and valid alternatives. As with all other South African languages, there is an urgent need for culturally and linguistically appropriate assessment measures in Afrikaans (Southwood, 2013; Southwood & Van Dulm, 2015). An alternative measure that has often been used is spontaneous language samples (Southwood & Russell, 2004), however, to the best of our knowledge no evidence-based guidelines have been described for this measure.

With neither validated translations nor the development of new assessment material being obvious solutions in the current South African context, language sample analysis (LSA) provides a reliable alternative (Bowles et al., 2020; Govindarajan & Paradis, 2019; Hux et al., 1997; Southwood & Russell, 2004). In diverse contexts, it is a valuable clinical measure that is considered more culturally sensitive than traditional language assessment measures (Bowles et al., 2020; Govindarajan & Paradis, 2019; Orizaba et al., 2020). Therefore it is not surprising that speech-language therapists (SLTs) have successfully used LSA as a criterion-referenced adjunct to language assessment measures, to assess children's spoken language skills (Bliss et al., 1998; Boerma et al., 2016; Bowles et al., 2020; Hux et al., 1997; Orizaba et al., 2020; Southwood & Russell, 2004). LSA may encompass a variety of language elicitation methods and contexts (Southwood & Russell, 2004). For the purpose of this study, LSA refers to language sampling within the context of interaction, where two individuals (an adult and a child) have a natural back-and-forth conversation (Byrd et al., 2012). By using naturalistic LSA, meaningful information about a child's functional, and social use of language can be described (Bowles et al., 2020; Gentilleau-Lambin et al., 2019). However, LSA is not restricted to conversational discourse; it may also involve narratives.

A large proportion of children's discourse is made up of narratives, hence it can be argued that narratives lay the foundation and certainly form part of children's everyday conversation and social interactions (Bliss et al., 1998; Southwood & Russell, 2004; Westerveld & Vidler, 2016). Narratives are highly relevant in

children's discourse across cultures as they comprise children's school- and home discourse (Gress & Hill, 2018). LSA, therefore, has great appeal (and potential) when analysing child language, yielding more complex language as opposed to only conversational samples (Southwood & Russell, 2004).

LSA provides crucial information regarding children's functional language use and interactive conversational skills, an aspect often overlooked in standardised assessment materials (de Villiers, 2004; Hux et al., 1997). However, it not only provides a way to assess children's use of language (*pragmatics)*, but also the form (*morphology, syntax, and phonology*), and content (*semantics*), as well as the child's ability to integrate these domains to communicate in everyday conversations (Bowles et al., 2020). Using LSA, a child's language is assessed in a contextualised situation, such as in conversational or narrative tasks, which represents a linguistic task that most children are familiar with (Bowles et al., 2020; Channell et al., 2018). This provides a naturalistic opportunity for children to display a range of linguistic skills (Orizaba et al., 2020) and demonstrate their functional use of these skills (Hux et al., 1997). As alluded to earlier, few traditional, standardised language assessment tools include a section to evaluate the use of language. By using LSA as a gold standard supplement to these tools, meaningful information about a child's functional, and social use of language can be determined (Bowles et al., 2020; Gentilleau-Lambin et al., 2019).

Despite the noticeable benefits of LSA, some challenges prevent SLTs from efficiently using LSA as a supplemental assessment measure (Alvesson & Kärreman, 2011; Bowles et al., 2020). The most prominent challenges related to using LSA, include (a) resource constraints in terms of time and workforce as SLTs have identified that the components of LSA such as the collection, transcription, and analyses of samples takes too much time; (b) limited uniformity in guidelines regarding the minimum length of sample to obtain a representative sample, which creates confusion and uncertainty when using LSA, and (c) the unavailability of developmental data for certain languages (Pavelko et al., 2016), including South African languages (Oosthuizen & Southwood, 2009; Southwood & Russell, 2004).

The individual procedures of LSA, including the collection and elicitation of language samples, transcription, and analysis are time-consuming (Pavelko et al., 2016). Time constraints for SLTs in South Africa is a pressing issue (Moonsamy & Kathard, 2015). This may be attributed to SLTs having extremely large caseloads with a 1:25 000 SLT to population ratio (Kathard & Pillay, 2013). The urgency to formulate evidence-based guidelines for the effective and reliable use of LSA, such as the parameters of what constitutes a representative language sample (e.g. in minutes or number of utterances) is urgently needed to ensure efficient language assessment in practice. Current guidelines show notable inconsistencies in literature (Pezold et al., 2020; Tommerdahl & Kilpatrick, 2014). For example, the suggested sample length in terms of number of words differs greatly from a minimum of 50 utterances up to 175-utterance samples (Pavelko et al., 2016; Shipley & McAfee, 2016; Cole et al., 1989, Gavin & Giles, 1996; Pavelko & Owens, 2017). Other studies recommend measuring samples according to minutes, ranging from 1-2 minutes up to more than 11 minutes (Crystal et al., 1976; Heilmann et al., 2010; Heilmann et al., 2008; Pavelko et al., 2016; Southwood & Russell, 2004; Tilstra & McMaster, 2007). Although conclusive evidence on the suggested length of representative samples does not yet exist, researchers agree that length of samples influences the outcome of the assessment and that longer transcripts are more reliable (Heilmann et al., 2010). Variability in the length of sample suggestions may also be attributed to the measures for which reliability was determined (Tommerdahl & Kilpatrick, 2014). Studies that consider only MLU (morphosyntactic skills) conclude that only 50 utterances provide a representative sample (Cole et al., 1989). However, in studies where multiple language components were tested, it was found that more utterances and longer samples were most representative (Gavin & Giles, 1996). The inconclusive evidence on the required length of sample (Pavelko & Owens, 2017) may influence the validity of LSA as a criterion-referenced language assessment measure. Consequently, SLTs view LSA as time-consuming and unstructured, opting not to use it in clinical practice despite acknowledging the valuable information that it may provide (Casby, 2011; Heilmann et al., 2010; Pavelko et al., 2016).

Apart from the variability of the length of sample guidelines, the limited uniformity regarding discourse sample elicitation, collection, transcription and

analysis procedures, further complicates the reliable use thereof (Finestack et al., 2014; Hux et al., 1997). Previous studies have identified that variability in the elicitation methods (Longhurst & Grubb, 1974; Southwood & Russell, 2004), sample context, and transcription procedures (Finestack et al., 2014) limits the generalisability of methods. LSA, which encompasses conversational and narrative discourse elicited in a play-based environment, clearly outlines the elicitation methods that are used for this measure. The transcription procedures, should again minimise the time it takes to use LSA. The current study, therefore, intended to outline these procedures and methods carefully to increase the generalisability of this assessment measure in practice.

In addition to the lack of guidelines on procedures and length or duration of samples and transcripts, the lack of developmental language data for LSA holds another recognised local (Bedford et al., 2013; Brothers et al., 2008) and global challenge (Pavelko et al., 2016). To establish language-specific developmental language data, a relatively homogenous standardisation group is required (De Lamo White & Jin, 2011) in terms of age, gender, ethnicity, and other cultural, socioeconomic and linguistic variables (Saenz & Huer, 2003). Therefore, a diverse population such as the multilingual and multicultural population living in South African poses specific challenges for obtaining developmental language data. While LSA is a well-suited approach to the South African context as argued above, the lack of developmental language data for the 11 official languages, limits the use of LSA across languages (Van Dulm & Southwood, 2014). In the absence of developmental data, the use of criterion-referenced measures is better suited to the diverse population (Shipley & McAfee, 2016). Criterion-referenced measures compare the individual's level of performance on a specific skill to a clinical expectation or predetermined performance criterion which is based on developmental language data or language descriptions (De Lamo White & Jin, 2011). The lack of knowledge about the typical language skills of children who speak various indigenous South African languages as a first language, including Afrikaans-speaking children, hinders the process of appropriate assessment (Southwood & Van Dulm, 2015). This prompts the investigation of LSA as an alternative criterion-referenced measure in Afrikaans language assessment, by describing the typical spoken language skills of

Afrikaans-speaking children. This description will yield preliminary developmental language data validating LSA as a criterion-referenced measure for practice.

From the discussion above it is clear that LSA provides a viable alternative to address the lack of appropriate assessment measures for comprehensive child language assessment focussed on the content, form, and use of language, in the South African context. However, challenges such as the lack of developmental language data (De Lamo White & Jin, 2011; Southwood & Van Dulm, 2015), contradicting evidence regarding adequate length of sample (Pezold et al., 2020), and inadequate information on the collection of language samples (Pavelko et al., 2016), prevent South African SLTs from effectively using LSA when conducting language assessment.

2. METHOD

Chapter aim:

This chapter describes the aims of the study as well as the methods used to conduct the research, according to recent literature. The different data collection procedures (sample elicitation and collection; transcription; analysis) are also described.

2.1. Research aims

The study aimed to suggest length of sample guidelines that yield a representative language sample. The researcher then aimed to describe the spoken language skills of typically developing Afrikaans-speaking children, between 3;6 (years; months) and 9;6, using LSA.

2.2. Research design

The study used a descriptive, cross-sectional, quantitative design (Leedy & Ormrod, 2020) to collect, transcribe, and analyse audio and video-recorded discourse samples of typically developing Afrikaans-speaking children. Descriptive research designs aim to describe the nature of a phenomenon as it currently stands (Leedy & Ormrod, 2020). No independent variables were introduced in the current study and language was observed within an interaction.

As a descriptive research design, cross-sectional studies involve the examination of multiple age groups at one point in time (Salkind, 2010). A limitation of a cross-sectional design is that it cannot reliably determine age-related changes, however, the different ages may be compared to determine age-related differences (Salkind, 2010). A notable advantage of cross-sectional designs is their efficiency, requiring only one assessment (Neuman, 2014). It is considered to be an easier and quicker design than longitudinal studies (Leedy & Ormrod, 2020). The age-related differences in measurable characteristics were quantitatively presented for this study. Quantitative research measures variables in a numerical way (Leedy & Ormrod, 2020). The current study used quantified measures to describe each of the domains, by calculating, for example, the mean length of utterance or the total number of words used. These quantified measures were then analysed using

descriptive statistics to describe the age-related differences between the groups that were investigated.

Quantified measures per minute were used to determine the length of sample guidelines by conducting within-group comparisons to calculate when all the measures would stabilise to indicate a representative sample.

2.3. Ethical considerations

This study carefully followed national and international ethical and legal standards by acting in the best interest of the participants of the study (World Medical Association [WMA], 2018). The study intended to further existing knowledge of the spoken language skills of typically developing Afrikaans-speaking children. However, the participants' rights and their well-being were always considered as a priority above the purpose of the study. Data collection only commenced once ethics approval from the Ethics Committee at the Faculty of Humanities at the University of Pretoria was granted [HUM001/1220 (Amendment)] (Appendix A). Since data collection for the current study occurred during the COVID-19 pandemic, it was considered in the best interest of the participants to ensure that each participant's caregiver completed a COVID-19 screening form on the day of the interaction (Appendix B). In minimising harm (i.e., the ethical principle of non-maleficence) and acting in the best interest of participants (i.e., the ethical principle of beneficence), other ethical considerations included informed consent, confidentiality, data storage processes, and plagiarism.

2.3.1 Informed consent and voluntary participation

Since the participants were children, informed consent was obtained from their legal guardians (typically primary caregivers such as parents) before data collection to allow participation in the study. An informed consent letter (Appendix C) explained to primary caregivers what the research entailed, that video and audio recordings would be recorded during data collection. It also included information regarding the use of the data for future research purposes, such as the Tool for Analysing Language and Communication (TALC) database. These caregivers were

requested to consent to the data being used- including the video and audio recordings as well as the participant selection criteria documents and results- for future research purposes. Furthermore, caregivers were carefully informed of the possible risks and benefits associated with voluntary participation in the study. They were given the option to receive the results after the data collection (including hearing and developmental screening results).

Per the Helsinki Declaration of Ethics (WMA, 2008), age-appropriate written and verbal information regarding the process of data collection was given to each participant to assent to their participation (Appendix D). Assent was thus obtained in addition to the consent given by primary caregivers. The option to withdraw from the study at any point in time should either the participant or caregiver feel the need to do so, without any negative consequences, was also explained to both caregivers and participants.

2.3.2 Confidentiality

Confidentiality is the protection of any identifying or personal information of the research participants (Neuman, 2014). During the data collection, the SLT assigned an alphanumeric code to each sample recording to disclose only the participant's age and gender. Any identifying information that was mentioned in the samples, (e.g. if the participants mentioned the names of their siblings or their names) were removed from the transcriptions after the analysis thereof. Any personal/ identifying information was indicated with a hashtag (#xxx) in the transcriptions and following analysis, the hashtag-indicated words were replaced by X's depending on the number of syllables of the word removed (e.g. "Pieter het saam met my gespeel" will be transcribed as "XX het saam met my gespeel").

The interactions were also video recorded. These videos were kept strictly confidential and were only accessible to the researchers of the study to whom ethics approval was granted. These researchers have also signed non-disclosure agreements. The deidentified digital data was stored on a password protected external hard drive for the duration of transcription and analysis of the samples

during this study and this hard drive was then stored in Room 2-6 at the Department of Speech-Language Pathology and Audiology at the University of Pretoria.

The consent forms signed by participants were stored digitally in the UP repository and hard copies were stored in Room 2-6 in the Department of Speech-Language Pathology at the University of Pretoria, separate from the recorded data during transcription and analysis. In the case of a participant withdrawing from the study, the recorded data will no longer be included in the study.

2.3.3 Data storage

Institutional guidelines of the University of Pretoria state that data in hard copy will be stored in Room 2-6 in the Department of Speech-Language Pathology and Audiology at the University of Pretoria for 15 years. The raw digital data (video and audio recordings), as well as digital transcriptions, are stored, and password protected in the UP Data Repository. Access to the data may only be granted to other researchers by the Research and Ethics Committee of the Faculty of Humanities at the University of Pretoria.

2.3.4 Plagiarism

In adherence to the Plagiarism policy of the University of Pretoria, all sources have been acknowledged using the American Psychological Association (APA) guidelines (American Psychological Association, 2019).

2.4. Participants

2.4.1 Participant selection criteria

Referral sampling (Chambers et al., 2020) was used to recruit a stratified sample in terms of gender and age. Participants that met the age criteria were recruited at a local dance school, from the acquaintances of the supervisors and a preschool newsletter insert was also used to recruit participants. The initially recruited participants were then asked for referrals of friends or family whose children would possibly meet the criteria.

Candidacy was determined before data collection using a custom-designed biographic questionnaire (Appendix E) and a hearing screening at the time of the visit. To describe developmental language data, the homogeneity of the group had to be controlled as far as possible by minimising linguistic, developmental, socioeconomic status (SES), and gender variables (Saenz & Huer, 2003). Therefore, six inclusion criteria were set, as shown in Table 2-1.

Table 2-1: Description of Inclusion Criteria

Criterion	**Theoretical justification**	**Method**
1. All participants were required to be Afrikaans first language speakers from the Tshwane area.	Limited developmental data for Afrikaans-speaking children exist (Southwood, 2013; Southwood & Van Dulm, 2015). This study aimed to introduce developmental data for LSA in Afrikaans by describing Afrikaans-speaking children's spoken language skills, thereby contributing to the body of knowledge of Afrikaans language development. Using the same geographical area reduced the dialectical variables and ensured a more homogenous sample.	Caregiver's self-report in the biographic questionnaire (Appendix E)
2. All participants had to present as typically developing.	To minimise the effect of confounding factors that may interfere with typical language development, participants had no remarkable history of cognitive, sensory, or motor development or medical conditions. This information was obtained during developmental screening of the younger children (<7;11 years; months) using the Parent's Evaluation of Developmental Status: Developmental Milestones (PEDS-DM) (Glascoe, 2013). The validity, reliability and accuracy of the PEDS-DM as a developmental	Self-report in biographic questionnaire and Developmental screening: *Parents' Evaluation of Developmental Status: Developmental Milestones (PEDS-DM)*

Criterion	Theoretical justification	Method
	screener has been established (Bedford et al., 2013; Brothers et al., 2008) and it has often been used in the South African context (van der Linde, 2015; van der Merwe et al., 2017). For older children (>7;11), their scholastic performance was used as the basis for developmental inclusion (per parent's judgement). The criteria included that they should never have repeated a school year or had received speech therapy (Heilmann et al., 2010).	
3. All participants were between the ages of 3;6 to 9;6.	The age range of the participants included in the study was divided into five sub-categories of 3;6-3;11, 4;0-4;11, 5;0-5;11, 6;0-6;11, and 7;0-9;6. The selection of this age range was based on Owens' Developmental Schemas (Owens, 2016). During preschool (ages 3 to 5), otherwise called 'The Exhibitor' stage, rapid changes in the use, content and form of language occurs. Pre-schoolers engage in conversation and use language to create context during this stage, which are skills that will be investigated in LSA. Narrative development is also prominent during this phase, with increasingly refined narrative skills (Owens, 2016). 'The Expert' stage (ages 6 to 12) is the age when complex spoken language is refined and the use of language in conversation and narration increases in complexity. Drastic pragmatic development is evident during this stage with the rapid development of conversational and narrative skills and refinement thereof based on social rules (Owens, 2016).	Biographic questionnaire

Criterion	Theoretical justification	Method
4. All participants had to be from middle-class socioeconomic status (SES).	The SES of participants was determined based on whether the caregivers' total income was within the South African tax-paying bracket. (i.e., < R7000 net home income per month). All caregivers earned more than R7000 net home income per month (n = 30). The influences of SES on language development are well-documented (Bowles, 2018). Exploration of the influence of SES specifically on the spoken language skills of Afrikaans speaking children is beyond the scope of the current study but should be explored in future research.	Biographic questionnaire
5. All participants had to have normal hearing status.	Hearing screening was done using the hearScreen™ Mobile App (HearX group) which is a screener for detecting possible hearing loss with comparable sensitivity (75,0 %) and specificity (98,5%) to traditional screening measures (Mahomed-Asmail et al., 2016). Hearing loss (HL) is a well-known risk factor for speech and language outcomes (Bruce Tomblin et al., 2014). The lack of access to speech and language input that children with HL experience, even with mild HL, may have long-term effects on language development and academic performance (Bruce Tomblin et al., 2014). To describe typical language, it was therefore pivotal to rule out the possibility of HL not only based on parent report in the biographic questionnaire, but also by conducting a hearing screening.	Apart from general information regarding hearing in the biographic questionnaire, hearing screening before the interaction using the hearScreen™ Mobile App.
6. Equal male and female	Three male and three female participants	Biographic

Criterion	Theoretical justification	Method
participants for each age category were included	were included for each age category. Research suggests that girls exhibit significantly larger vocabularies and mean length of utterance (MLU) scores than boys for the ages 18 months up to 4- to-5 years (Longobardi et al., 2016). It was further found that gender differences in social competence only emerge during early school years (Longobardi et al., 2016). To ensure that the typical language skills across the gender spectrum are investigated, equal numbers of male and female participants were included in the study.	questionnaire

2.4.2 Participant description

All participants included in the study (N = 30) met all the inclusion criteria. Six participants were included per age category and equal male and female participants were included.

Table 2-2: Participant age and gender description per age category

	Group 1: 3;6-3;11		**Group 2: 4;0-4;11**		**Group 3: 5;0-5;11**		**Group 4: 6;0-6;11**		**Group 5: 7;0-9;6**	
n	6		6		6		6		6	
Gender	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
n	3	3	3	3	3	3	3	3	3	3
Age *mean (SD)*	3,717 (0,133)		4,220 (0,130)		5,467 (0,308)		6,325 (0,431)		8,483 (0,725)	

Although only Afrikaans first language speakers were included, as expected in a multilingual country such as South Africa, the majority of the participants have also been exposed to a second language (n = 24; 80%). The majority of the participants' LoLT were Afrikaans (n = 29; 96.67%), one participant's LoLT was bilingual Afrikaans and English.

No developmental concerns were reported for any of the participants and of the older participants (>7;0), no one had repeated a school grade. Two participants (6,67%) have received speech-language therapy, however, upon further investigation, it was reported by the caregivers that the intervention was aimed at speech sound errors that were still age-appropriate at the time of intervention. These participants could therefore be included. The majority of the participants did not have any sensory impairments, save one (3.33%) who had a visual impairment and uses glasses permanently to correct visual acuity. All the participants passed the hearing screening (N = 30; 100%) with no need for retesting of any frequencies.

All participants had at least two adults living with them. All adults living with the participants had at least 12 years of formal education (matric); 95 % (n = 57) of the adults had tertiary education. Furthermore, all the participants' families earned more than R7000 net home income per month (N = 30), which can be seen as middle-to-high class SES.

2.5. Equipment and materials

A qualified SLT well versed in paediatric practice, elicited, and recorded the discourse interactions, using pictures, wordless books and age-appropriate toys and games. The materials were carefully selected based on the developmental appropriacy for each age category. These toys had to be appropriate for the type of play that children engage in, according to age. The familiarity of materials based on cultural and social context was also important to ensure that the children remained interested and willing to interact with the materials. The activities, especially the initial ones, were also selected intentionally and used in an order that would assist the SLT to overcome the warm-up effect of unfamiliarity with the conversational partner.

The last factor that was considered, but not successfully controlled for, was the noise that the materials would create on the recordings. Although the selected toys, such as puppets and magnetic farm and doll house scenes, were intended to create as little noise as possible, factors such as the floor in the room where the interaction was facilitated and noise typically found in residential neighbourhoods, compounded the effects of noise on the recordings.

All materials were used for the generation of narratives and conversational discourse, and not for retelling. Based on the definition of LSA described for this study, story retelling does not render as functional and natural discourse as narratives and conversational discourse. Story retelling may provide more syntactically complex samples (Westerveld & Vidler, 2016) than conversational discourse, which may not be an accurate reflection of typical discourse and natural language.

Three different sets of elicitation materials were used for data collection. Each set included drawing as the introductory activity, with the SLT requesting "*Draw a picture of yourself*". For 3;6 to 4;11-year-olds, toys that could be used for symbolic play, personal event narratives and familiar routines, such as a toy kitchen and doctor or vet toys were included. For this age category, all the toys, pictures and pictureless books were more concrete. The second set was used for the 5;0 to 6;11 age category. The prompt given in the introductory activity was extended to *"Draw a picture of everyone you live with"*. This set included toys that were less structured and more abstract, such as wild and sea animals for story generation and elicitation of discourse. Some familiar routines that were included were a shopping and takeaway scene that could encourage symbolic play as well as personal event narratives. The third and final set of materials were used for data collection in the 7;0-9;6 age category. The prompt for the drawing activity was "*Draw a picture of yourself with your friends*". Abstract activities were included in this set such as dice with abstract questions such as *"If you had to go to the moon, what would you take with and why*?". The activities focused on emotions, verbal reasoning and problem-solving and participants were expected to describe what the people in the wordless pictures think.

Table 2-3: List of toys used for elicitation

Age	**List of toys**
3;6-4;11-year-old	Two realistic animal puppets
	Toy kitchen Fruits and vegetables Doctor toys Vet toys

	A toy car that could be taken apart completely using a battery-powered toy drill.
	Toy playground Fire station
	Story books Busy wordless pictures
5;0-6;11-year-old	Abstract animal puppet
	Prepositions game
	Little rainbow-coloured figurines with a die for colours and a die for numbers
	Jumping frogs
	Wild animals Sea creatures
	Farm and dollhouse magnetic boards.
	Cause and effect picture cards
	Shopping and fast-food scenes
	Miscellaneous tiny objects
	Emotion cards
	Life cycle picture cards
	Books that are wordless or written in an unfamiliar language.
7;0-9;6-year-old	Abstract question dice
	Space station
	Picture cards
	“What are they thinking” picture cards
	Wordless picture books

To obtain the best quality recordings possible, an appropriate microphone (Zoom H1n Handy Recorder) for audio recordings, and a mobile phone (Samsung Galaxy S7 Edge) for the video recordings were used. For the transcription and analysis of the samples, a personal computer was used according to the procedures of Sampling Utterances and Grammatical Analysis Revised (SUGAR; Pavelko & Owens, 2017) with noted adaptations for Afrikaans (Oosthuizen & Southwood, 2009) is described in Section 2.7 and Appendix F.

2.6. Data collection

Elicitation environment

For the interpretation and replication of study results, a careful description of the elicitation environment is pivotal (Finestack et al., 2014). To elicit as natural discourse as possible, the environment should also reflect a natural environment. All but one participant was assessed in natural environments (e.g. in their own or a family member's home or clinic therapy room). Only one participant came to the clinic for the interaction, as requested by the caregiver, citing that it would not be possible to make a recording in a quiet environment at home. Although the home environment provides functional, naturalistic information about a child's functioning, it is not always feasible in practice to visit clients (Kramer et al., 1979). The current study was conducted during the COVID-19 pandemic and could therefore not accommodate all the participants in a clinic environment due to government regulations at the time of data collection. Following those regulations, caregivers had to complete a COVID-19 screening form (Appendix B) before the interaction started and the SLT wore a face mask for the entire visit.

The elicitation of the samples took place in a quiet room with the SLT present and in some cases, also a family member. The material used was only the relevant pictures, wordless books, toys, and games available to the child for self-generated discourse. However, since most of the interactions took place in the participants' home context, their toys were also around, and participants had to be prompted and reminded to only use the toys made available by the SLT.

Elicitation method for discourse sampling

The samples were elicited using conversation as well as typical narration that naturally forms part of children's discourse. The specific materials that were described earlier in this chapter were used to elicit conversational discourse and personal event narratives and story generation.

All the participants were prepared for the interaction by their caregivers. Some caregivers, who indicated that their children were usually shy around strangers, requested a picture of the SLT and pictures of some of the materials to prepare their

children in advance for the interaction. However, since most of the interactions took place in the participants' homes, they were comfortable to interact with the SLT. The caregivers introduced the participants to the SLT upon arrival. The SLT would ask the participant to choose a room for the interaction to take place. While setting up the microphone, mobile phone for video recording and foam mat to reduce reverberation of the microphone, the SLT asked the participants what they knew about the interaction. At the start of the recording, age-appropriate assent was obtained from the participants while the SLT explained the procedures of the interaction and allowed participants to ask any questions. Some caregivers were present up to when the child completed the assent and would then excuse themselves to a nearby room while some remained in the room for most of the interaction.

The SLT elicited one-hour interactions from each of the 30 participants. Prompts included open-ended questions such as "tell me more about this". The interactions were child-led and the SLT responded to each child's responses to the materials. Although there was no pre-determined set of questions, the SLT used the materials in the same order with most of the participants. If a participant was reluctant to interact in this way, another order was followed to ensure that the initial activities attract the participant's interest.

Length of sample

The SLT elicited one-hour interactions from each of the participants. Only the child's utterances were transcribed for the complete interaction. Analyses were conducted at different time segments. However, to ensure that the LSA guidelines described in this study remain relevant and practical for the clinical use thereof, the time indications for length of sample in minutes includes both the therapist's and the child's utterances. This decision was taken to equip clinicians with a guideline for how long an entire interaction typically needs to be to yield a representative language sample.

Transcription

Multiple language sampling and transcription procedures have been discussed in literature. Two of these procedures were investigated to determine which one

would be most appropriate and suited to meet the research aims of the current study. These were Systematic Analysis of Language Transcripts (SALT; Miller & Iglesias, 2012) and Sampling Utterances and Grammatical Analysis Revised (SUGAR; Pavelko & Owens, 2017). Both SALT and SUGAR analyses have normative databases to compare the individual's performance to that of their peers of the same age (Lovelace, 2019). Unfortunately, no normative data is available for Afrikaans in either of these databases.

SALT analysis is a well-known database that guides the transcription and coding of language samples as well as software for the transcription and calculation of multiple measures (Lovelace, 2019). SALT has been praised for the in-depth analysis it provides with multiple measures, including transcript length, intelligibility, macro analysis, syntax and morphology, semantics, verbal facility, and errors (SALT database, n.d.). SALT, however, uses professional software for which a license is necessary to access and has been scrutinized for taking extensive amounts of time to use. Users need to undergo training and it requires more utterances than the SUGAR analysis (Lovelace, 2019).

For this study, it was decided that SUGAR analysis would instead be used to transcribe the samples. SUGAR analysis takes much less time to transcribe and analyse, and no software is needed for the transcription of the samples (Lovelace, 2019). Although SUGAR provides fewer measures than SALT, the measures that are part of SUGAR analysis are sufficient for this study. Supplemental measures for pragmatics and semantics were used for the analysis of these domains as well as certain adaptations to SUGAR procedures for Afrikaans. Afrikaans is recognised as an official language in South Africa and Namibia. In the low-and-middle-income setting of South Africa, for which this research is intended, SUGAR is more appropriate as a measure that does not need supplemental training or resources, and time to use in practice (Pavelko & Owens, 2017).

The transcription procedures as well as handouts, practice examples and sub-analysis forms are available from the SUGAR language website and is cost-free

(SUGAR, 2020). On this website videos to guide the transcriptions are also available (SUGAR, 2020).

Transcription of the samples was done by three transcribers using the SUGAR procedures (Pavelko & Owens, 2017) with noted adaptations in Table 2-4. The SUGAR procedures that were used included that the sample was transcribed by retyping only the child's utterances, with spaces between each word. All words that the child directly imitates were omitted from the transcription. It requires that no utterance be changed whatsoever, therefore no morphemes that the child omitted were added. The SUGAR procedures further describe that the no fillers, such as "uhm", should be transcribed and no disfluencies should be included. Repeated words were only included if it was used for emphasis. When more than two clauses are joined by "en" *{and},* only the first "en" was transcribed and the rest were considered a run-on sentence.

Transcription procedures

Table 2-4: Conventions and adaptations to Sampling Utterances and Grammatical Analysis Revised (SUGAR; Pavelko & Owens, 2017)

Adaptation	**Theoretical justification**
The SUGAR procedures state that transcription should stop at 50 utterances however, to address the secondary aim of the study, the whole interaction was transcribed as different lengths of transcriptions will be analysed and compared.	An analysis of the transcribed sample at 5 minutes, 10 minutes, 20 minutes, 30 minutes, 40 minutes, and 60 minutes was done and the total number of words (TNW) was counted for each time segment. The measures at each different segment were compared to suggest guidelines for length of sample.
Contractions were transcribed as the child used them.	As per SUGAR analysis procedures, all contractions were transcribed the way they were used. These were counted as one word, for example, *daars* instead of *daar is*; *eks* instead of *ek is.*
All personal identifying information, such as first names and names of places, were removed from the transcribed sample after analysis, as required	The removal of personal information was necessary to maintain the confidentiality of the participants. Elicitation of proper nouns with

Adaptation	Theoretical justification
by the conditions of ethics approval.	personal questions was limited. All personal information was indicated with a hashtag in front (#xxx) to remove this from samples after analyses were conducted.
All single-morpheme utterances were removed from the transcription.	To ensure greater sensitivity of MLU measures and to ensure an accurate reflection of the child's linguistic abilities (Oosthuizen & Southwood, 2009) the single-morpheme utterances, yes and no, were not included in the transcription. In the context of discourse, pragmatic variables, like a high frequency of single-morpheme responses and elliptical responses to the therapist's questions, may skew the MLU measures (Oosthuizen & Southwood, 2009). Although yes/no questions were avoided throughout the data collection process, it remains part of typical discourse and could therefore not be completely excluded in the raw samples.
Code-switching was a phenomenon that occurred frequently.	Code-switching was indicated in the transcriptions using braces ({xx}).
Unintelligible or overlapping speech	The SUGAR procedures indicate that unintelligible words should be omitted, and if more than 2 words in an utterance are unintelligible, that too should be omitted. However, unintelligible or overlapping utterances were transcribed using block brackets ([xx]). This was only done where unintelligible utterances were intelligible enough to transcribe after considering the context of interaction or listening to it louder. Where utterances remained unintelligible after these described attempts, they were omitted.
Onomatopoeia or non-verbal behaviours	Where onomatopoeia (e.g., toet-toet; boef-boef)

Adaptation	Theoretical justification
	or non-verbal behaviours, such as laughing were used, forward slashes (/xyxy/) indicated this and it did not form part of the word count for the number of different words (NDW) or the TNW.
Number words	Limited evidence regarding the inclusion or exclusion of rote-counting or number words were found in analyses (SALT database; Domingo Villarroel, 2011). Counting prompts such as give-N were not used during the elicitation of interactions, although some children rote-counted some objects during play. This counting was transcribed as it would likely not influence lexical diversity in the NDW calculation significantly. Furthermore, the procedures of the current study are intended to provide practical guidelines to encourage the use of LSA in language assessment. Therefore, the removal of counting from samples without any overt justification may decrease the practicality of the procedures described in the study, in practice. This may be further explored in future research to provide evidence for the influence of number words on LSA results.
Orthographic transcription and phonological analyses	The samples were only orthographically transcribed for the current study. Although phonetic transcription may provide in-depth insight into the phonological development of Afrikaans-speaking children, it was beyond the scope of this study. Informal descriptions of phonology made in the current study may be used to further explore phonological development in future research.
Samples were transcribed using ELAN (ELAN v. 6.1, 2021), designed for the transcription of audio or video recordings.	ELAN (ELAN v. 6.1, 2021), an open source software programme that was used for transcription of the audio recordings for the

Adaptation	Theoretical justification
	current study. The software allows for the annotation of audio and/or video recordings and the annotations are time-aligned to the sample.

2.7. Data analysis

Language sample analysis was used to analyse each participant's sample that was collected. This was done based on each language domain form *(morphology, syntax, phonology),* content *(semantics),* and use *(pragmatics)* (Owens, 2016), to ensure a holistic description of the spoken language skills of each participant. Furthermore, the same measures were used to analyse the sample at several points in time to compare the different outcomes depending on length of sample.

Table 2-5: Areas and measures used for data analysis

Language domain and measure	Theoretical justification	Application to the current study
FORM		
Morphology and syntax: *Mean length of utterance (MLU)*	MLU is a measure that has been described extensively in the literature of both language development as well as LSA (Brown, 1973; Ebert, 2020; Pavelko & Owens, 2017; Pezold et al., 2020; Shipley & McAfee, 2016). MLU indicates the average length of an utterance and can be used in words or morphemes to provide an overarching reflection of a child's morphosyntactic skills (Pezold et al., 2020). One problematic aspect in MLU calculation methods that were identified was that MLU scores may be influenced by pragmatic variables such as single-morpheme responses and elliptical responses to an adult's questions (Oosthuizen & Southwood, 2009). After identifying this and many other pitfalls in the use and	For the current study, MLU-w words was be calculated. To calculate MLU-w, the SUGAR methods were used and the TNW (as seen in the Microsoft Word file's word count) was divided by the TNU (using the numbering function in Microsoft Word). The alternate method of MLU-w calculation as described by Oosthuizen and Southwood (2009) has been adapted to still include utterances where the child completes the adult's utterance and social utterances, such as *wat is dit?* 'what is this?', nee *dankie* 'no

Language domain and measure	Theoretical justification	Application to the current study
	reporting of MLU calculation methods, the authors compared the traditional MLU calculation method versus an alternate method of calculation which was more effective at addressing discourse bias (Oosthuizen & Southwood, 2009). By the definition of language sample analysis for this study, the importance of consideration of pragmatic variables cannot be overstated. No significant differences in the MLU in words (MLU-w) versus MLU in morphemes (MLU-m) were found, indicating that either one can be used for Afrikaans discourse sampling measures (Oosthuizen & Southwood, 2009) Since this study aims to make LSA more user-friendly to clinicians in practice, words are faster and easier to count than morphemes and according to Arlman-Rupp et al. (1976), MLU-w is more theoretically justifiable as no *ad hoc* decisions regarding the segmentation into morphemes are necessary (Oosthuizen & Southwood, 2009).	thanks', *kyk hier* 'look here', so 'like this'. These utterances from part of typical discourse and were therefore not excluded during transcription. A careful description of the alternate method used in this study is included in Appendix F.
Phonology: *Informal description*	Phonology as a part of the form of language is concerned with the rules guiding the structure, distribution and sequencing of speech sounds and varies across languages (Owens, 2016). The investigation of Afrikaans-specific phonology is therefore pivotal. There is a relationship between lexical and phonological and lexical development (Stoel-Gammon, 2011), which is concerned with the vocabulary growth seen across developmental trajectories.	Frequently occurring errors (occurring in more than 2 participants per age category) were identified and compared to the guidelines for the age of acquisition of different Afrikaans consonants (see Geertsema, 2016, for a summary), to qualitatively describe patterns of phonological development in

Language domain and measure	Theoretical justification	Application to the current study
	Phonetic repertoires expand with age (Stoel-Gammon, 2011) and therefore when describing language skills across ages, the inclusion of phonology becomes obvious. Although phonetic transcription and analysis of the samples are beyond the scope of this study, the developmental phonological patterns and articulation errors were recorded separately and qualitatively compared within each age category.	Afrikaans-speaking children.
CONTENT		
Semantics: *Number of different words (NDW)*	Calculating NDW in a language sample is common practice amongst researchers in the field of LSA of narratives and discourse to determine lexical diversity (Ebert, 2020; Ebert & Scott, 2014; Imgrund et al., 2019; Pavelko & Owens, 2017). NDW has higher test-retest reliability in larger samples as opposed to the total number of words used and is therefore useful at indicating the diversity of vocabulary used (Pezold et al., 2020). NDW measure was used to describe the lexical diversity of each age group as well as to determine differences in lexical diversity between the different age groups. The concerns raised by SLTs regarding the time efficiency of traditional language sampling practices (Pavelko et al., 2016) were considered in the method of calculation of NDW.	The samples were imported to a custom Python code which provided the NDW measure instantly.
USE		
Pragmatics: *Prutting and Kirchner Pragmatic Protocol*	Language use is an important domain of language that specifically investigates the social aspects of language (Owens, 2016).	Three qualified SLTs independently rated video recordings of the interaction

Language domain and measure	Theoretical justification	Application to the current study
(1987)	The assessment of language use is often overlooked in formal assessments (de Villiers, 2004; Hux et al., 1997) and cannot be accurately assessed in structured situations (Adams, 2002). Considering the potential use of this research's findings in clinical practice, a holistic description of all domains is paramount. LSA provides an opportunity to assess all domains reliably, most notable is the assessment of pragmatics. The samples were video recorded, which enabled the researchers to also consider and investigate pragmatic behaviours using the Prutting and Kirchner Pragmatic Protocol (1987). This protocol is used extensively for both clinical and research purposes and evidence supports it as being a comprehensive and appropriate tool for the assessment of pragmatics (Adams, 2002; Timler, 2018). The protocol serves as a checklist that consists of 30 verbal and non-verbal descriptive behaviours that guide observation of overall pragmatic skills (Adams, 2002; Prutting & Kirchner, 1987).	using the Prutting and Kirchner Pragmatic Protocol (Appendix G) for 13 interactions each. The inter-rater reliability was determined for 15 scores.
LENGTH OF SAMPLE		
Timed samples: *Length of sample in minutes*	The varied length of sample guidelines in literature provides it in terms of duration (time in minutes) and length of sample in utterances. For clinical relevance, it seems more appropriate to determine sample representativeness in terms of the duration of the interaction (including the child and SLT's utterances). To ensure the guidelines provided here are holistic, however, the	The recorded interactions were one hour each. However, for this study, the complete analysis was done at different time segments. A full analysis was done at 5 minutes, 10 minutes, 20 minutes, 30 minutes, 40 minutes, and 60 minutes. This

Language domain and measure	Theoretical justification	Application to the current study
	TNU and TNW for the time increments that were investigated were also discussed.	provided an opportunity to compare the results of each segment and in doing so determining the length of sample most suitable to provide a holistic view of a child's spoken language skills. Inferential statistics were used for comparative analysis of timed samples as well as the TNW and TNU for each segment.
Number of utterances: *Total number of words (TNW)/ Total number of utterances (TNU)*		For each time increment, the TNW and TNU were counted to further provide length of sample guidelines in terms of number of words.

2.8. Reliability

Three raters transcribed the samples, two SLTs and one linguist. Three other SLTs rated the Pragmatic Protocol. An online statistical calculator (Arifin, 2020) was used to determine the minimum sample size for intraclass correlation coefficient (ICC) for a level of significance of 5% (α = 0.05) and a power of at least 0.8 (as recommended by Cohen, 1988). Fifteen observations yielded an ICC of 0.8. To establish reliability between the respective three raters the ICC is used for normally distributed data and the non-parametric Spearman's rand correlation is used for non-normal data. The Shapiro-Wilk test was run to test the normality of the measurements.

Transcriptions

The Shapiro-Wilk test showed that the TNU and NDW were normally distributed after applying the square-root transformation and accordingly, the ICC was used and

showed that the interrater agreement measures for these two variables were excellent (TNU = 0.963; NDW = 1.000) (Cicchetti, 2014). Two measures (MLU and TNW) were not normally distributed (even after applying transformations) and inter-rater reliability was determined using non-parametric Spearman correlations which obtained moderate to very strong correlations (MLU= 0.676; TNW = 0.977) (Akoglu, 2018).

Pragmatics

For Pragmatic Protocol scores, the Shapiro-Wilk test (p = 0.138) indicated normality and the ICC could be computed. Although ICC was equal to 0.671, it is not statistically significant, the p-value was greater than 0.05 (p = 0.084 > 0.05)). This might be due to the small sample size which typically causes the power of a statistical test (especially parametric tests), to be poor as well as the subjective nature of scoring pragmatic abilities (Adams, 2002). Accordingly, the nonparametric Spearman correlation (rs) is used to test the inter-rater reliability.

The correlation between Rater 1 and Rater 3 is statistically significant (p = 0.044, < 0.05) with a strong positive correlation of 0.889, however the correlation between Rater 2 and Rater 3 (rs = 0.148, p = 0.812) and between Rater 1 and Rater 2 (rs = 0.553, p = 0.334) are not statistically significant. Without loss of generality, either the values of Rater 1 or Rater 3 can be used, or the values of Rater 1 and Rater 3 can be averaged over; for this study, the latter was used.

3. DESCRIBING THE SPOKEN LANGUAGE SKILLS OF TYPICALLY DEVELOPING AFRIKAANS- SPEAKING CHILDREN USING DISCOURSE ANALYSIS- A PILOT STUDY

Authors: Petria Liebenberg, Jeannie van der Linde (PhD), Isabella Schimper, Febe de Wet (PhD), Marien Graham (PhD), Juan Bornman (PhD)

Journal: Language, Speech and Hearing Services in Schools [1]
Submitted: 2 November 2021

ABSTRACT

Purpose: Discourse analysis is widely regarded as the gold standard of language assessment in multilingual contexts such as South Africa. However, the limited availability of developmental language data for South African languages and the uncertainty regarding the length of sample guidelines complicate its reliable use. The study aimed to provide guidelines on length of sample necessary to yield a representative sample and concurrently provide a preliminary description of the spoken language skills of Afrikaans-speaking children, using discourse analysis.

Method: The study involved thirty typically developing Afrikaans-speaking children aged between 3;6 (years; months), and 9;6. A descriptive research design was used to transcribe and analyze one-hour interactions collected in natural environments of participants recruited using referral sampling. Video and audio recordings of the samples were transcribed using adapted SUGAR analysis procedures.

Results: Results indicated that mean length of utterance in words, number of different words and pragmatic protocol measures stabilize at 30 minutes and no significant differences were found between 30 minutes and longer time segments. Lexical diversity results correlated with the findings of the lexical specificity and accuracy in the Prutting and Kirchner Pragmatic Protocol. The developmental trajectories for pragmatic and phonological development were consistent with existing guidelines.

[1] This article was edited in accordance with the editorial specifications required by the journal and may differ from the editorial style of the rest of this document.

Conclusion: The study concluded that 30-minute interactions provide a representative discourse sample for Afrikaans-speaking children who are between 3;6 and 9;6 years old. It provides promising preliminary developmental data and clinical guidelines, confirming the potential of discourse analysis as a reliable component of language assessment in Afrikaans.

INTRODUCTION

Language assessment in multilingual contexts, such as South Africa, is challenging (Barratt et al., 2012; Bornman et al., 2018; Pascoe et al., 2013; Southwood & Van Dulm, 2015; Verdon et al., 2015). Discourse analysis (DA) may provide a reliable alternative to traditional clinical language assessment (Bowles et al., 2020; Govindarajan & Paradis, 2019; Hux et al., 1997). As an adjunct to standardized assessment measures for language assessment, DA has been widely used by speech-language pathologists (SLPs) to assess children's spoken language skills (Bliss et al., 1998; Boerma et al., 2016; Bowles et al., 2020; Hux et al., 1997; Orizaba et al., 2020). Divergent descriptions of DA for spoken language have been put forward in varying contexts (Alvesson & Kärreman, 2011; Bliss et al., 1998; Farahani, 2013). For the purpose of this study, DA refers specifically to a language assessment measure within the context of interaction, where two individuals have a natural back-and-forth conversation (Byrd et al., 2012).

DA provides crucial information regarding children's functional language use and interactive conversational skills, aspects often overlooked in standardized materials (de Villiers, 2004; Gentilleau-Lambin et al., 2019; Hux et al., 1997). It provides a way to assess the form (*morphology, syntax,* and *phonology*), content (*semantics*), and use of language (*pragmatics*) as well as a child's ability to integrate these domains to communicate in everyday conversations (Bowles et al., 2020). DA can be implemented to assess a child's language in the context of familiar linguistic activities, such as in conversations or narratives (Bowles et al., 2020; Channell et al., 2018). Few traditional child language assessment tools include assessment of pragmatics as a domain. By using DA, meaningful information about a child's functional and social use of language can be obtained (Bowles et al., 2020; Gentilleau-Lambin et al., 2019; Spencer et al., 2020).

Despite the benefits of DA, some challenges prevent SLPs from using it as an efficient assessment measure (Alvesson & Kärreman, 2011; Bowles et al., 2020).

The most prominent barriers include (a) resource constraints in terms of time and manpower; (b) limited guidelines regarding the length of an adequate sample, and (c) the unavailability of developmental data for certain languages, specifically South African languages (Pavelko et al., 2016).

Collecting, transcribing, and analyzing language samples are time-consuming processes (Pavelko et al., 2016). In South Africa, where SLPs have extremely large caseloads of a 1:25 000 SLP to population ratio (Kathard & Pillay, 2013), time constraints are a pressing issue (Moonsamy & Kathard, 2015). The urgency to improve DA guidelines, such as the parameters of what constitutes a representative language sample in terms of time or the number of words needed to ensure efficient language assessment in practice, therefore becomes evident.

Guidelines for the length of sample (in either number of utterances or in minutes) needed to provide a holistic view of a child's natural use of language, are inconsistent in literature (Pezold et al., 2020; Tommerdahl & Kilpatrick, 2014). Suggested sample length in terms of number of utterances differs greatly from a minimum of 50 utterances up to 175-utterance samples (Pavelko et al., 2016; Shipley & McAfee, 2016; Gavin & Giles, 1996; Pavelko & Owens, 2017). Other studies recommend measuring samples according to the duration of the sample in minutes, ranging from 1-2 minutes to more than 11 minutes (Heilmann et al., 2010; Tilstra & McMaster, 2007; Pavelko et al., 2016). Although conclusive evidence regarding the optimal length of samples has not yet been obtained, researchers agree that length of sample influences the outcome of the assessment and that longer samples yield more reliable results (Heilmann et al., 2010). The indeterminate length of sample (Pavelko & Owens, 2017) and the limited uniformity regarding sample collection procedures (Hux et al., 1997) may influence the validity of DA as a criterion-referenced language assessment measure. This could explain why SLPs often view language sampling and DA as time-consuming and unstructured, opting not to use it in clinical practice despite acknowledging the valuable information that it may provide (Casby, 2011; Heilmann et al., 2010; Pavelko et al., 2016).

In addition to the lack of guidelines on the length or duration of samples, the lack of developmental language data to use during DA remains a challenge, both in South Africa (Bedford et al., 2013; Brothers et al., 2008) and internationally (Pavelko et al., 2016). To provide developmental language guidelines, a relatively

homogenous standardization group is required (De Lamo White & Jin, 2011) with equivalence in terms of culture, socio-economics, and linguistic backgrounds, age, gender, and ethnicity (Saenz & Huer, 2003). A diverse population such as is found in multilingual and multicultural South Africa, therefore, poses specific challenges for obtaining developmental language data. While DA is an well-suited approach within the South African context, the lack of developmental language data for ten of the 11 official languages limits the use of DA across languages (Van Dulm & Southwood, 2014). In this context, the use of criterion-referenced measures is better suited (Shipley & McAfee, 2016). Criterion-referenced measures compare the individual's level of performance on a specific skill to a clinical expectation or predetermined performance criterion which is based on developmental language data or language descriptions (De Lamo White & Jin, 2011).

The lack of knowledge about the typical language skills of children who speak various indigenous South African languages as a first language, including Afrikaans-speaking children, hinders the process of appropriate assessment (Southwood & Van Dulm, 2015). This prompts the investigation of DA as an alternative criterion-referenced measure in Afrikaans language assessment, which requires describing the typical spoken language skills of Afrikaans-speaking children. A preliminary description can yield developmental language data validating DA as a criterion-referenced measure for practice.

DA provides a viable alternative to norm-referenced standardized measures, a way to address the lack of appropriate resources to evaluate the content, form, and use of language for comprehensive language assessment in South Africa. However, challenges such as the lack of developmental language data (De Lamo White & Jin, 2011; Southwood & Van Dulm, 2015), contradicting evidence regarding adequate length of sample (Pezold et al., 2020), and time constraints (Pavelko et al., 2016), prevent South African SLPs from effectively using DA when conducting language assessment.

Research aims

This pilot study aimed to suggest guidelines for a representative language sample by investigating and describing length of sample results. It further sought to provide a preliminary description of the spoken language skills of typically developing

Afrikaans-speaking children between 3;6 (years; months) and 9;6, using discourse analysis.

METHOD

Institutional Review Board approval was obtained before commencing with data collection [HUM001/1220 (Amendment)]. Participation in the study was voluntary and informed consent was obtained from the participants' legal guardians as well as age-appropriate assent from the participants themselves. Confidentiality was maintained throughout the study by assigning alphanumeric codes to each participant, omitting all personally relevant information from the transcriptions after analysis, and by excluding this information when reporting individual findings.

Research design

A descriptive, cross-sectional, quantitative design (Leedy & Ormrod, 2020) was used to collect, transcribe, and analyze audio- and video-recorded discourse samples of the spoken language of typically developing Afrikaans-speaking children. The audio recording ensured clear and high-quality language recordings for reliable transcription, while video recordings assisted in the analysis of language use.

Participants

Referral sampling (Chambers et al., 2020) was used to recruit a stratified sample in terms of gender and age. Inclusion criteria were as follows: a) Afrikaans first language speakers; b) between the ages 3;6 and 9;6, c) typically developing; d) middle-high class socioeconomic status (SES), i.e., tax-paying and living in what is considered middle-to-high-class neighborhoods; and e) normal hearing status. The latter three criteria were included as delayed development, low SES, and hearing loss are commonly associated with language delays (Bowles, 2018; Bruce Tomblin et al., 2014).

The age range was stratified into five sub-categories of 3;6-3;11 (mean [SD] = 3.72 [0.13]), 4;0-4;11 (mean [SD]= 4.22 [0.13]), 5;0-5;11 (mean [SD] = 5.47 [0.31]), 6;0-6;11 (mean [SD]= 6.33 [0.43]), and 7;0-9;6 (mean [SD]= 8.48 [0.73]), where SD denotes the standard deviation, with three male and three female participants per category. This resulted in a total sample of 30 participants.

Procedure

Equipment and materials

Materials for candidacy

A custom-designed biographic questionnaire was used. For the younger participants (<7;11), developmental information was obtained using the Parent's Evaluation of Developmental Status: Developmental Milestones (PEDS:DM) screening tool (Glascoe, 2013). The PEDS:DM is only suitable for children from birth to 7;11. The validity, reliability, and accuracy of this developmental screener have been established (Bedford et al., 2013; Brothers et al., 2008), and it has often been used in the South African context (van der Linde, 2015; van der Merwe et al., 2017). For the older participants (>7;11), their scholastic performance records were used as the basis for developmental inclusion, the requirement being that they had never repeated a school year nor had ever received speech therapy. The hearScreen™ Mobile App (hearX Group) was used to detect possible hearing loss. This method has been shown to have high accuracy when compared to traditional screening measures (Mahomed-Asmail et al., 2016).

Materials for elicitation

A qualified SLP elicited discourse and narrative interactions, using age-appropriate pictures and wordless books as well as age-appropriate, gender-neutral toys and games. Although it was intended that the elicitation materials should not create noise that would mask the speech signal, it was challenging to account for noise during natural play as well as normal background noise in home environments and residential neighborhoods[2]. All materials were culturally relevant to ensure narratives and materials that would be familiar to the linguistic, cultural, and socio-economic context of participants (Southwood & Russell, 2004).

Three different sets of elicitation material were used for data collection. Each set included drawing as the introductory activity. For participants from 3;6 to 4;11, the SLP started by requesting "*Draw a picture of yourself*". The toys included for this group, such as a toy kitchen and doctor or vet toys, could be used for the elicitation

[2] Although the home environment provides functional, naturalistic information about a child's functioning, it is not always feasible in practice to visit clients (Kramer et al., 1979). The current study was conducted during the COVID-19 pandemic, and could therefore not accommodate all the participants in a clinical environment due to governments regulations at the time of data collection.

of symbolic play, personal event narratives, and familiar routines. All the toys, pictures, and wordless books for this group were of a concrete (realistic) nature. The second set was used for the 5;0 to 6;11 age category. The introductory activity prompt was extended to *"Draw a picture of everyone you live with"*. This set included less structured and more abstract toys, such as wild animals and sea creatures for story generation and elicitation of discourse. Some familiar routines that were included were shopping and fast-food scenes to encourage symbolic play and personal event narratives. The third and final set of materials were used for data collection in the 7;0 to 9;6 age category. The prompt for the drawing activity was "*Draw a picture of yourself with your friends*". Abstract activities were included in this set such as games with dice and abstract questions including *"If you had to go to the moon, what would you take with and why*?". The activities focused on emotions, verbal reasoning, and problem-solving, and participants were prompted to convey what the people in the wordless books were thinking.

To obtain the best possible quality audio recording, an appropriate microphone (Zoom H1n Handy Recorder) was used, augmented by a mobile phone (Samsung Galaxy S7 Edge) for the video recordings. For the transcription and analysis of the samples, a personal computer was used according to the procedures prescribed by Sampling Utterances and Grammatical Analysis Revised (SUGAR; Pavelko & Owens, 2017) with noted adaptations for Afrikaans (Oosthuizen & Southwood, 2009).

Data collection

Informed consent was obtained, after which the biographic questionnaire was completed independently by the parents. The participants were recorded in natural environments. Only one participant came to the Department of Speech-Language Pathology clinic at the University of Pretoria for the interaction, whilst all the other participants were seen in their homes. The elicitation of the samples typically took place with only the child and the SLP present, although a family member also joined in some cases. The interactions were elicited using conversation that naturally forms part of children's discourse as well as personal event narratives and story generation using the materials described earlier. The SLP elicited one-hour interactions from each of the participants. However, when considering set-up time, obtaining assent,

and hearing screening in addition to the interaction itself, the SLP spent approximately 75 minutes with each participant.

Transcription procedures

Three suitably qualified raters (two SLPs and one linguist) transcribed the samples using their personal computers and a free downloadable software program, ELAN (ELAN v. 6.1, 2021), designed for the transcription of audio or video recordings. Transcription procedures (see Table 1) were discussed with each rater, and a document containing all the procedures was shared with them to ensure consistency. Five randomly selected interactions - one per age group - were transcribed by all three raters to measure inter-rater reliability.

The transcription time for each interaction was approximately four hours. The current study supports the notion that transcription is a meticulous and time-consuming process (Pavelko et al., 2016). Therefore, clear guidelines regarding the shortest possible sample length of interaction to ensure a representative sample is essential.

Table 3-1: Conventions and adaptations to Sampling Utterances and Grammatical Analysis Revised (SUGAR; Pavelko & Owens, 2017)

Adaptation	**Theoretical justification**
The SUGAR procedures state that transcription should stop at 50 utterances however, to address the secondary aim of the study, the whole interaction was transcribed as different lengths of transcriptions were analyzed and compared.	An analysis of the transcribed sample at 5 minutes, 10 minutes, 20 minutes, 30 minutes, 40 minutes, and 60 minutes was done and the total number of words (**TNW**) and total number of utterances (**TNU**) were counted for each time segment. The measures at each different segment were compared to suggest guidelines for length of sample.
Contractions were transcribed as the child used them.	As per SUGAR analysis procedures, all contractions were transcribed the way they were used. These were counted as one word.
All personal information, such as names, were removed from the transcribed sample after analysis, as required by the conditions of ethics approval.	The removal of personal information was necessary to maintain the confidentiality of the participants. All personal information was indicated with a hash in front (#xxx) and removed from samples after analyses were conducted.
All single-morpheme utterances were removed from the transcription.	To ensure greater sensitivity of mean length of utterance (**MLU**) measures (Johnston, 2001) and to ensure an

Adaptation	Theoretical justification
	accurate reflection of the child's linguistic abilities (Klee & Fitzgerald, 1985) the single-morpheme utterances yes and no were not included in the transcription. Although yes/no questions were avoided throughout the data collection process (Channell et al., 2018; Pavelko & Owens, 2017), it remains part of the typical discourse and could therefore not be completely excluded in the raw samples.
Code-switching is known as the switching between two or more languages during discourse and is a common phenomenon in South African conversations (van Dulm, 2007). It also occurred frequently in the discourse of participants included in this study and was therefore further investigated.	Code-switching was indicated in the transcriptions using braces ({xx}).
Unintelligible or overlapping speech	This was indicated using block brackets ([xyxy]).
Onomatopoeia or non-verbal behaviors	Where onomatopoeia or non-verbal behaviors, such as laughing, were used forward slashes (/xyxy/) indicated this and it did not form part of the word count for NDW or TNW.
Number words	Limited evidence regarding the inclusion or exclusion of rote-counting or number words was found (SALT database, n.d.; Domingo Villarroel, 2011). Counting prompts such as give-N were not used in the elicitation of interactions, although some children rote-counted some objects during play. This counting was transcribed as it would likely not influence lexical diversity in the NDW calculation significantly.
Orthographic transcription and phonological analyses	The samples were only orthographically transcribed for the current study. Although phonetic transcription may provide in-depth insight into the phonological development of Afrikaans-speaking children, it was beyond the scope of this study.

Data analysis

Discourse analysis procedures were used to analyze each participant's transcribed sample. The aim was to use a comprehensive approach to encompass all language domains, i.e., form *(morphology, syntax, phonology),* content

(semantics), and use *(pragmatics)* (Owens, 2016). This ensured a holistic, representative description of the spoken language skills of each participant.

The raw one-hour interaction recordings included both the SLP and the child's utterances, thereby providing practical information regarding the time that it takes to elicit a representative sample. However, following the SUGAR transcription procedures, the transcribed samples included only the participant's utterances to correlate the length of an interaction in minutes with the corresponding number of utterances. The child's utterances for the entire interaction were transcribed with measures taken at different time segments to compare how outcomes differ at different lengths of sample. The total number of words and utterances per segment were counted.

Language use was analyzed by three independent SLP-raters. The raters scored the Prutting and Kirchner Pragmatic Protocol (Prutting & Kirchner, 1987) while watching the video recordings of interactions at different intervals to analyze language use holistically. Table 2 indicates the measures used for each language domain as well as the procedures.

Table 3-2: Measures for data analysis in each language domain

Language domain and measure	**Theoretical justification and procedure**
Morphology and Syntax: *Mean length of utterance (MLU)*	MLU is a measure that indicates the average length of an utterance and can be used in words or morphemes to provide an overarching reflection of a child's morphosyntactic skills (Pezold et al., 2020). For the current study, an alternative method of MLU calculation was used to ensure the highest possible reliability and generalizability of the findings for use in clinical settings (Oosthuizen & Southwood, 2009). The alternate method of MLU-w calculation has been adapted to still include utterances where the child completes the adult's utterance and social utterances, such as *wat is dit?* 'what is this?', *nee dankie* 'no thanks', *kyk hier* 'look here', *so* 'like this'. These utterances from part of typical discourse and were therefore not excluded during transcription (Oosthuizen & Southwood, 2009). To calculate MLU-w the TNW was divided by the TNU.
Phonology*:* *Informal description*	Although phonetic transcription and analysis of the samples are beyond the scope of this study, the developmental phonological patterns and articulation errors were recorded separately and qualitatively compared within each age category. Frequently occurring errors were identified and compared to the

Language domain and measure	**Theoretical justification and procedure**
	guidelines for the age of acquisition of different Afrikaans consonants (Geertsema, 2016) to qualitatively describe patterns of phonological development in Afrikaans-speaking children.
Semantics: *Number of different words (NDW)*	Calculating NDW in a language sample is common practice amongst researchers in the field of DA of narratives and discourse to determine lexical diversity (Charest et al., 2020; Ebert, 2020; Ebert & Scott, 2014; Imgrund et al., 2019; Pavelko & Owens, 2017). NDW has higher test-retest reliability in larger samples as opposed to the total number of words used and is therefore useful to indicate the diversity of vocabulary used (Pezold et al., 2020). This measure was used to describe the lexical diversity of each age group as well as to determine differences in lexical diversity between the different age groups. The concerns raised by SLPs regarding the time efficiency of traditional language sampling practices (Pavelko et al., 2016) were considered in the method of calculation of NDW. The samples were imported to a software program which provided the result of this measure instantly.
Pragmatics: *Prutting and Kirchner Pragmatic Protocol (1987)*	The samples were video recorded, which enabled the researchers to also consider and investigate typically occurring pragmatic behaviors using an evidence-based checklist, namely Prutting and Kirchner Pragmatic Protocol (1987). This recognized protocol consists of 30 descriptive behaviors sub-divided into three aspects, i.e. verbal (i.e. topics; turn-taking), paralinguistic (i.e. intelligibility; prosodics) and non-verbal (i.e.kenesics; proxemics) aspects to guide pragmatic skill observation in naturalistic tasks. (Adams, 2002; Prutting & Kirchner, 1987).

Regarding the statistical analyses, normality of distribution was determined by using the Shapiro-Wilk test, while inter-reliability between three raters was established using the intraclass correlation coefficient (ICC) and the non-parametric Spearman's correlation for the normally and non-normally distributed data, respectively. After establishing reliability, Friedman's test was used to test for significant differences between time segments, and if the p-value was < 0.05, the *post hoc* Wilcoxon signed-rank (WSR) test was used for pairwise comparisons. The Mann-Whitney (MW) test was used to test for differences between independent groups. For both the WSR and MW tests, if the *p*-value is less than 0.05, the

difference is statistically significant. To compute the achieved power of these tests, the level of significance (α = 0.05), the sample size (n = 6), and the effect size are needed. Using Cohen's (1969) recommendation for detecting moderate to large effect sizes, the achieved power equals 0.559 and 0.358 for the WSR and MW tests, respectively. It should be noted that although the power is less than the desired value of 0.8 due to the small sample size of this pilot study (only six participants per age group), the researchers ensured that the achieved power of the reliability testing was above 0.8 by having a sufficient number of raters take an adequate number of measurements per participant; ICC power = 0.905, Spearman correlation power = 0.895.

Inter-Rater Reliability

Inter-rater reliability was determined for the transcriptions as well as the Pragmatic Protocol annotations. Three raters transcribed the samples (two SLPs and one linguist) while a separate group of three SLPs rated the sample in terms of language use implementing the Pragmatic Protocol.

Transcriptions (language form and content)

The Shapiro-Wilk test showed that the TNU and NDW were normally distributed after applying the square-root transformation, and accordingly, the ICC was used and showed that the interrater agreement measures for these two variables were excellent (TNU = 0.963; NDW = 1.000) (Cicchetti, 1994). Two measures (MLU-w and TNW) were not normally distributed (even after applying transformations), and inter-rater reliability was determined using non-parametric Spearman correlations, which obtained moderate to very strong correlations (MLU-w= 0.676; TNW = 0.977) (Akoglu, 2018).

Pragmatics scoring (language use)

For Pragmatic Protocol scores, the Shapiro-Wilk test (p = 0.138) indicated normality, and the ICC was computed. Although ICC was equal to 0.671, it is not statistically significant (p = 0.084). This might be due to the subjective nature of scoring pragmatic abilities (Adams, 2002), despite using a standardized protocol. Accordingly, the more robust non-parametric Spearman correlation (rs) was used to

test the inter-rater reliability. The correlation between Rater 1 and Rater 3 is statistically significant (p = 0.044, < 0.05) with a strong positive correlation of 0.889, but the correlation between Rater 2 and Rater 3 (rs = 0.148, p = 0.812) and between Rater 1 and Rater 2 (rs = 0.553, p = 0.334) was not statistically significant. Without loss of generality, either the values of Rater 1 or Rater 3 can be used, or the values of Rater 1 and Rater 3 can be averaged; for this study, the latter procedure was used.

RESULTS

Length of sample guidelines

To determine the length of sample guidelines, the measure per minute for MLU-w, NDW, and TNW was calculated for each of the following interval values: 5; 10; 20; 30; 40, and 60 minutes. The correlation between the new per minute measures (MLU-w/m, NDW/m, and TNW/m) was subsequently calculated to determine if there are statistically significant differences between the different intervals. *Post hoc* pairwise comparisons were calculated to determine what the differences between intervals were, in cases where the Friedman test indicated statistically significant differences (p < 0.05). Table 3 depicts all the significant and non-significant differences after pairwise comparison between the different intervals.

Table 3-3: p-values for the post hoc Friedman test for differences of MLU-w/m, NDW/m, and TNW/m between the different intervals

	***p*-values for:**	**3;6-3;11**	**4;0-4;11**	**5;0-5;11**	**6;0-6;11**	**7;0-9;6**
5 min vs 10 min	**MLU-w/m**	0.273	0.855	0.273	0.273	0.273
	NDW/m	-	-	0.465	0.465	0.855
	TNW/m	0.715	-	0.068	-	-
5 min vs 20 min	**MLU-w/m**	*0.028	0.144	*0.028	*0.028	*0.028
	NDW/m	-	-	*0.045	0.144	0.584
	TNW/m	0.201	-	0.068	-	-
5 min vs 30 min	**MLU-w/m**	*0.005	*0.045	*0.002	*0.005	*0.005
	NDW/m	-	-	*0.009	*0.014	0.280
	TNW/m	0.064	-	0.219	-	-
5 min vs 40 min	**MLU-w/m**	*0.001	*0.028	*0.001	*0.001	*0.001
	NDW/m	-	-	*0.002	*0.003	*0.028
	TNW/m	*0.018	-	*0.028	-	-
5 min vs	**MLU-w/m**	*0.000	*0.001	*0.000	*0.000	*0.000

	p-values for:	3;6-3;11	4;0-4;11	5;0-5;11	6;0-6;11	7;0-9;6
60 min	**NDW/m**	-	-	*0.000	*0.000	*0.003
	TNW/m	*0.018	-	*0.001	-	-
10 min vs 20 min	**MLU-w/m**	0.273	0.201	0.273	0.273	0.273
	NDW/m	-	-	0.201	0.465	0.465
	TNW/m	0.361	-	1.000	-	-
10 min vs 30 min	**MLU-w/m**	0.064	*0.045	*0.031	0.064	0.064
	NDW/m	-	-	*0.045	0.064	0.165
	TNW/m	0.123	-	0.563	-	-
10 min vs 40 min	**MLU-w/m**	*0.028	*0.045	*0.028	*0.028	*0.028
	NDW/m	-	-	*0.018	*0.028	*0.018
	TNW/m	*0.045	-	0.715	-	-
10 min vs 60 min	**MLU-w/m**	*0.001	*0.001	*0.001	*0.001	*0.001
	NDW/m	-	-	*0.001	*0.001	*0.002
	TNW/m	*0.045	-	0.144	-	-
20 min vs 30 min	**MLU-w/m**	0.355	0.355	0.217	0.355	0.355
	NDW/m	-	-	0.355	0.217	0.355
	TNW/m	0.440	-	1.000	-	-
20 min vs 40 min	**MLU-w/m**	0.273	0.465	0.273	0.273	0.273
	NDW/m	-	-	0.273	0.144	0.100
	TNW/m	0.273	-	0.715	-	-
20 min vs 60 min	**MLU-w/m**	*0.028	*0.045	*0.028	*0.028	*0.028
	NDW/m	-	-	*0.028	*0.011	*0.018
	TNW/m	0.273	-	0.144	-	-
30 min vs 40 min	**MLU-w/m**	0.355	0.643	0.643	0.355	0.355
	NDW/m	-	-	0.355	0.355	0.165
	TNW/m	0.537	-	0.438	-	-
30 min vs 60 min	**MLU-w/m**	0.064	0.090	0.165	0.064	0.064
	NDW/m	-	-	0.064	0.064	*0.045
	TNW/m	0.440	-	0.063	-	-
40 min vs 60 min	**MLU-w/m**	0.273	0.201	0.273	0.273	0.273
	NDW/m	-	-	0.273	0.273	0.465
	TNW/m	1.000	-	0.273	-	-

*p-value significant at a 5% level of significance; - indicates where no significant differences were found upon calculation of the Friedman test, therefore pairwise comparison for these values was not run.

No statistically significant differences were found between 30 minutes and the subsequent time segments for any of the measures except one (NDW/m 30 min vs

60 min for the 7;0-to-9;6-year-old cohort) across all five age groups. The TNU and TNW measured at 30 minutes for each category are shown in Table 4.

Table 3-4: TNU and TNW used at 30 minutes of the interaction

Measure		3;6-3;11	4;0-4;11	5;0-5;11	6;0-6;11	7;0-9;6
TNU	**Mean**	163.5	155.8	199.8	214.5	249.1
	(SD)	*(58.2)*	*(88.6)*	*(53.0)*	*(47.4)*	*(94.2)*
	Median	157.0	152.5	182.5	198.0	233.8
	(IQR)	*(82.0)*	*(186.1)*	*(105.0)*	*(95.8)*	*(141.3)*
TNW	**Mean**	874.0	719.9	1542.2	1641.0	1909.1
	(SD)	*(477.4)*	*(472.7)*	*(403.7)*	*(664.7)*	*(660.2)*
	Median	793.0	846.5	1491.5	1618.0	1705.0
	(IQR)	*(817.5)*	*(909.4)*	*(785.5)*	*(1300.0)*	*(1221.0)*

Familiarity influences were considered to determine the length of sample guidelines. The “warm-up effect” suggests that the first part of a language sample may skew the results, as SLPs differ in their interaction styles when trying to overcome the unfamiliarity influence on the interaction (Heilmann et al., 2010).

To investigate the potential influence of this effect, the transcribed samples were analyzed twice, in sections of 30 minutes and 40 minutes duration. The sample from 0-30 minutes (sample 30 A) was correlated to the sample from 10-40 minutes (sample 30 B) and the same procedure was used to correlate the two samples of 40 minutes each (0-40 minutes [40 A] vs 10-50 minutes [40 B]). No statistically significant differences between samples A (from 0 minutes) and samples B (from 10 minutes) were found for any of the measures.

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The descriptive results of the measures for morphosyntactic skills (MLU-w), semantics (NDW), and pragmatics [Pragmatic Protocol (PP)] appear in Table 5.

Table 3-5: Descriptive Statistics per group at 30 minutes

	3;6-3;11		4;0-4;11		5;0-5;11		6;0-6;11		7;0-9;6	
	Median *(IQR)*	**Mean *(SD)***	**Median *(IQR)***	**Mean *(SD)***	**Median *(IQR)***	**Mean *(SD)***	**Median *(IQR)***	**Mean *(SD)***	**Median *(IQR)***	**Mean *(SD)***
MLU-	5.32	4.99	4.21	4.26	8.23	8.50	8.66	7.89	7.74	7.79

w	*(2.67)*	*(1.84)*	*(1.94)*	*(1.63)*	*(6.30)*	*(3.98)*	*(5.59)*	*(3.06)*	*(1.63)*	*(0.95)*
NDW	231.50 *(108.25)*	226.89 *(77.51)*	237.50 *(217.00)*	206.17 *(104.10)*	381.50 *(118.00)*	384.17 *(70.73)*	362.17 *(160.00)*	384.39 *(84.91)*	421.00 *(144.75)*	460.50 *(104.46)*
PP	26.50 *(3.875)*	26.92 *(2.01)*	27.00 *(2.00)*	27.00 *(1.67)*	29.75 *(2.25)*	29.08 *(1.28)*	29.50 *(1.63)*	29.25 *(0.88)*	29.00 *(0.63)*	28.92 *(0.80)*

IQR denotes inter-quartile range and median, as a measure of central tendency for non-normal distributed data, denotes the middle number in the data set. PP indicates the scores of the Prutting and Kirchner Pragmatic Protocol.

Morphosyntactic skills

When comparing the youngest group (3;6-3;11-year-olds) to the oldest group (7;0-9;6-year-olds) there were significant differences in the measures for MLU-w (p = 0.009), NDW (p = 0.002) and TNW (p = 0.009). Although the MLU-results obtained for both the 5-year-olds and the 6-year-olds were higher than that of the 7-to-9-year-olds, the differences between the cohorts (5;0-5;11 vs 7;0-9;6 [p = 0.937] and 6;0-6;11 vs 7;0-9;6 [p = 0.589]) were not significant. Similarly, the 3-year-olds obtained higher mean MLU-w scores than the 4-year-olds, but the difference was not statistically significant (p = 0.310).

Phonology

An informal description of phonology could be obtained from the data collected for DA. The most common phonological error across all age categories was distortion and/or deletion of the /r/ sound (n = 8). In the youngest group, /s/ distortion (n = 1), weak syllable deletion (n = 2) and final consonant deletion (n = 1) were noted. In the 4;0-4;11 age category, the same errors were noted (/s/ distortion n = 1; weak syllable deletion n = 1; final consonant deletion n = 2). However, the final consonant deletion errors were much more inconsistent than in the younger group. One participant also presented with inconsistent initial consonant deletion errors.

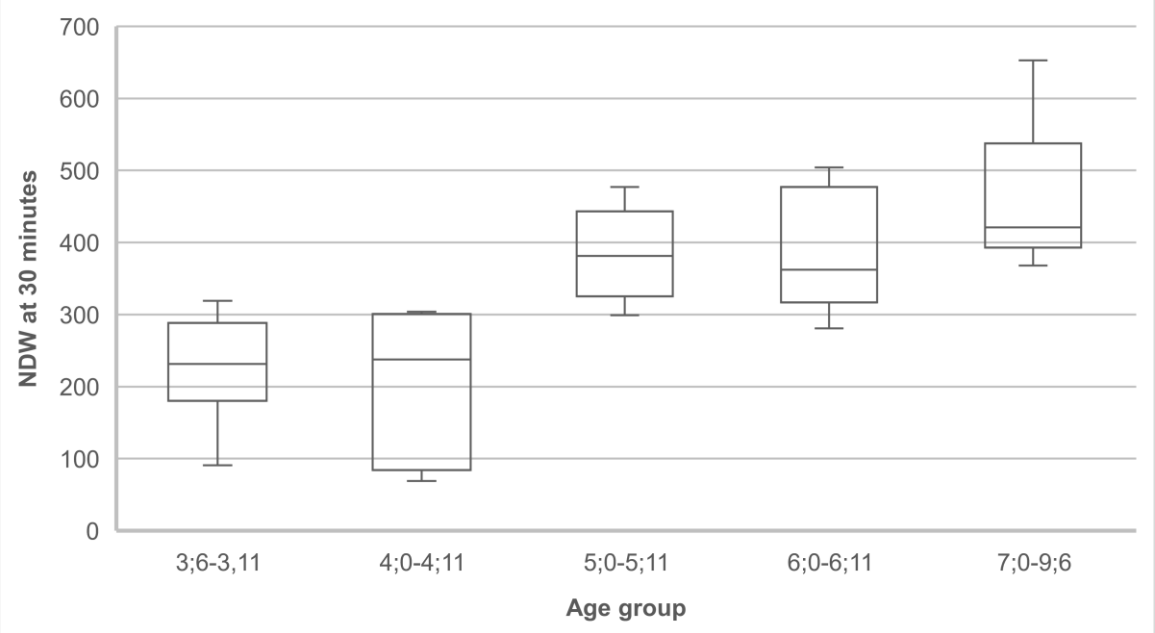
In the 5;0 to 5;11 and 6;0 to 6;11-year-old age categories, no phonological errors were noted. In the oldest group (7;0 to 9;6), one participant distorted the /r/ sound, while none of the other participants had any speech sound errors.

Semantic skills

The NDW scores obtained indicated the expected increase in semantic abilities with age, as these scores increased steadily with age. There were no significant

differences in the NDW-scores between the 5;0-5;11 and the 6;0-6;11 cohorts (p = 1.000) nor between the 6;0-6;11 and the 7;0-9;6 cohorts (p = 0.169). The NDW-scores in Figure 1 depict the developmental age trajectory for semantic abilities, which increases from a mean score of 231.50 different words for the youngest group to a mean of 421.00 different words for the oldest group.

Figure 3-1: Boxplots representing the minimum, first quartile, median, third quartile, and maximum of NDW scores at 30 minutes for each age group



Pragmatics

Similar to all other measures, an increase in the mastery of pragmatic skills was observed across the age categories. In Figure 2, the stabilization of pragmatic skills with age can be seen in the smaller variation of the pragmatic protocol scores as children mature.

Figure 3-2: Boxplots representing the minimum, first quartile, median, third quartile, and maximum of pragmatics protocol scores for each age category

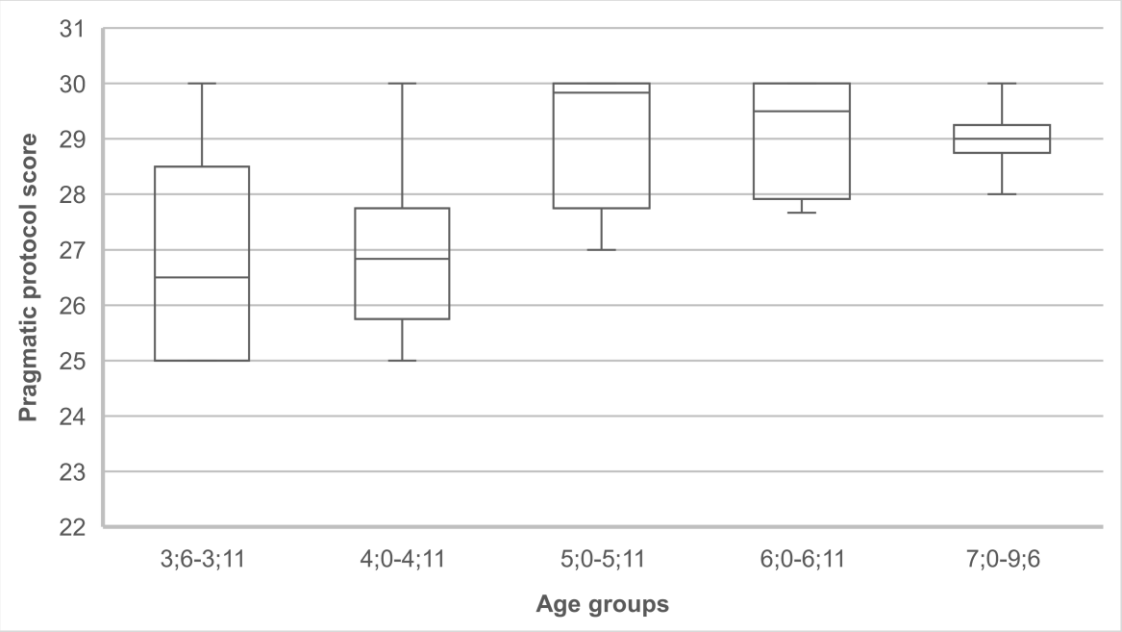
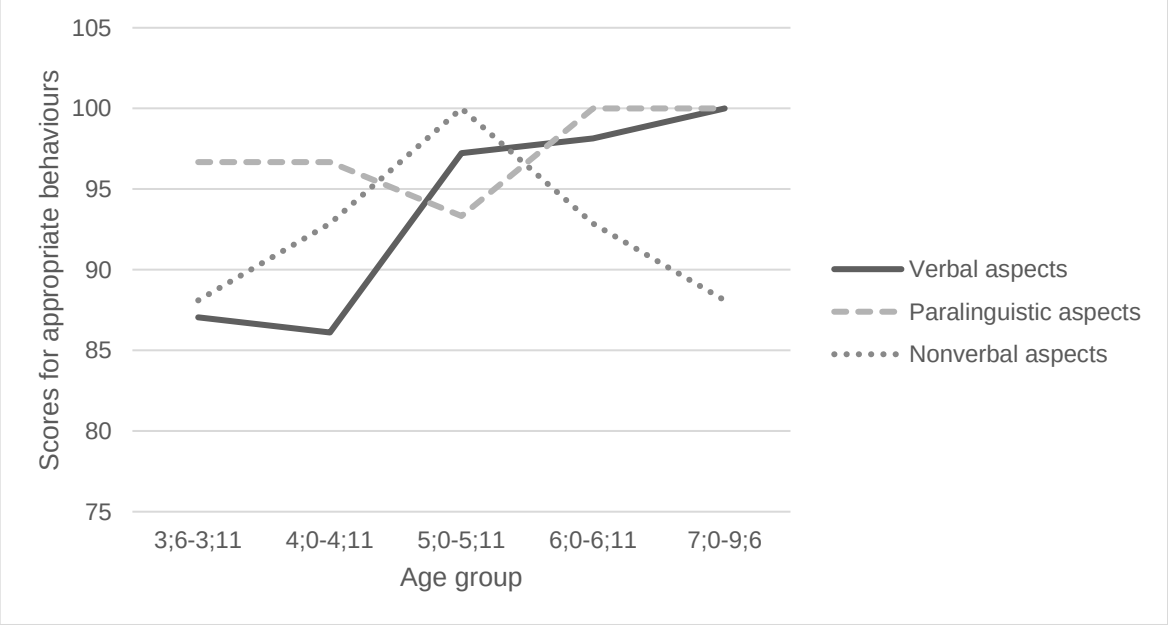


Figure 3-3: Percentage scores for appropriate behaviors in each aspect of the Pragmatic Protocol (Prutting & Kirchner, 1987)



The maturation of specific pragmatic skills is clear from Figure 3, especially pertaining to verbal aspects. The younger groups, 3;6 to 4;11 years old, displayed low levels of lexical accuracy and specificity (*n* = 7). This finding may be attributed to the still-developing vocabularies of these groups, concurring with the significantly lower NDW scores of these two categories compared to the older groups. Eye gaze

improved for some of the participants (*n* = 4) as the interaction progressed. The paralinguistic aspects remain relatively stable (93,33–100%) throughout the chronological progression. In the 5;0-5;11-year-old age group, verbal aspects increase while paralinguistic aspects decrease.

The slightly lower nonverbal aspects score for the two older categories (6;0-6;11 and 7;0-9;6) is attributed to many participants (*n* = 7) opting for the interaction to take place at a tabletop. This preference diminished the potential observability of natural physical proximity as the children were sitting at appropriate physical proximity due to the table layout rather than due to appropriate pragmatic skill. The initial overall pragmatic scores of typically developing Afrikaans-speaking children, varying between 86.11% and 100 %, indicate the sophisticated language use of this population.

DISCUSSION

DA has been described as the gold standard for natural language assessment (Channell et al., 2018; Heilmann et al., 2010), yet discrepancies in guidelines regarding suggested length of sample hamper the efficient use of the method in clinical practice (Pavelko et al., 2016; Pavelko & Owens, 2017). In the case of the Afrikaans clinical population, the use of DA is further complicated by the limited availability of developmental language data (Southwood & Van Dulm, 2015). This pilot study aimed to provide clinical guidelines for the length of sample in addition to preliminary developmental spoken language data regarding Afrikaans-speaking children.

Length of sample

The study confirmed that an Afrikaans discourse sample is representative of overall language skill at 30 minutes and that the sample can be taken from 0-30 minutes with no significant effect (*p*-values = 0.094 to 0.156) when the first part of the interaction was disregarded. Previous studies suggest that when using unstructured conversational and narrative tasks to elicit language samples, a language section longer than the frequently advised 50 utterances may be necessary (Heilmann et al., 2010; Gavin & Giles, 1996). The results of the current study concur with these findings and confirm that longer samples are needed to

reliably obtain a representative discourse sample. Research reported in existing literature investigated the reliability and representativeness of samples within smaller intervals and concluded that the smaller samples could be used (Heilmann et al., 2010). The authors compared 1-minute vs 3-minute vs 7-minute samples and concluded that there were no significant differences between these samples (Heilmann et al., 2010). As in the current study, Heilmann et al. (2010) also used conversational and narrative language samples. The results obtained in the current pilot study, however, indicate that longer intervals may provide more reliable guidelines for the representativeness of samples. In the SUGAR study (Pavelko & Owens, 2017), a 30-minute sample was also elicited, but only the first 50 utterances were used for clinical relevance and generalizability of the guidelines across age categories. The authors did not suggest a guideline regarding length in minutes that would yield an interaction containing 50 child utterances.

Further support of the current study's findings that longer samples are necessary to represent spoken language skills was found in the report by Oosthuizen and Southwood (2009). When calculating MLU-w using the alternate method employed by the current study, it was recommended that SLPs use samples of at least 100 utterances as opposed to the traditionally recommended 50 utterances (Oosthuizen & Southwood, 2009). The method used in the current pilot study yielded more than 100 utterances in a 30-minute sample. A guideline in terms of the length of interaction is more clinically relevant than one specifying the number of utterances, whilst also providing the most representative sample.

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Preliminary developmental data for all language domains were obtained (i.e., language form, content, and use), emphasizing the usefulness of DA as a clinical measure (Bowles et al., 2020; Heilmann et al., 2010; Manning et al., 2020). Age-related changes were noted in all the DA measures (MLU-w, NDW, PP) included in the current study.

Morphosyntactic skills

Using MLU-w to describe morphosyntactic skills has long been recognized as a reliable measure of overall language ability (Heilmann et al., 2010; Manning et al., 2020; Pavelko & Owens, 2017). The study used the alternate method of MLU calculation in words (MLU-w) to quantify and describe the children's morphosyntactic skills. Although not statistically significant, the results show that there is a tendency for the number of utterances to increase with age. The MLU-w scores show an increasing trend, indicating the expected developmental trajectory for morphosyntactic skills.

For all age groups except one, the age-related developmental trajectory of MLU-w in the current pilot study was consistent with the existing preliminary data for Afrikaans (Oosthuizen & Southwood, 2009) as well as with normative data from English (Pavelko & Owens, 2017). The five-year-old cohort performed better than expected from existing data.

Phonology

Some evidence regarding the speech sound development of Afrikaans-speaking children has been provided in the literature (Geertsema, 2016; Lotter, 1974). The informal descriptions of phonological and articulation errors have been compared to the age of acquisition guidelines (Geertsema, 2016). The development of the /s/ and voiced alveolar trill /r/ sound is only expected at the ages of 6 to 7 years (Geertsema, 2016). The results in the current study are aligned with the expected mastery of these sounds, except for one participant in the oldest age category (i.e. 7;0 to 9;6-year-olds).

The error patterns noted for Afrikaans-speaking children decreased only slightly later than the norms for English age-matched peers (Bowen, 1998). For example, according to English norms, final consonant deletion should diminish by 3;3, while according to the current results it is still present up to 4;1. This finding provides preliminary evidence that phonological patterns in Afrikaans may differ slightly from those of other languages, which highlights the need for future research to report on developmental phonological data for this population.

Semantic skills

Semantic skills could also be analyzed using DA by calculating the NDW, a commonly used measure for lexical diversity (Ebert, 2020; Ebert & Scott, 2014; Imgrund et al., 2019; Pavelko & Owens, 2017). Familiarity with the context yields greater lexical diversity and semantic complexity, as seen when children talk about their own experiences (Channell et al., 2018; Squires et al., 2020). The initial results of the current study support this hypothesis as the NDW/m measure decreased, although not significantly, as time progressed, and unfamiliar activities were introduced. When considering the feasibility of using the DA procedures described here, it is important again to consider the influence of sample length on the opportunity for children to produce language representative of their spoken language skills. Bearing this in mind, these findings support the use of a sample of at least 30 minutes.

To the best of the researchers' knowledge, no NDW data for Afrikaans are currently available. When comparing the results of the different age categories in the current pilot study, the steady development of semantic skills and refined narrative skills are evident (Owens, 2016). The NDW scores increase for each age group, which indicates the growth of vocabulary throughout these chronological ages and therefore emphasizes the usefulness of this measure as a metric of spoken language skill (Charest et al., 2020).

Pragmatics

DA also enabled exploration of the participants' use of language. The current preliminary results indicated age-related development and mastery of pragmatic skills before the age of 10 years, as reported before (Gentilleau-Lambin et al., 2019). The results show steady increases in pragmatic skills with improved verbal aspects, such as lexical specificity and accuracy, with age. This is most likely due to maturation and development of more sophisticated pragmatic skills and vocabulary development. The paralinguistic aspects of unintelligibility and disfluency reduced with age, as fewer phonological processes and developmental disfluencies were observed. Nonverbal aspects such as foot/leg and hand/arm movement became more appropriate in the older age groups, while eye gaze also became more

consistent and appropriate with age. However, the impeded observability of physical proximity due to the setting at a tabletop has influenced nonverbal aspects scores in the older groups (6;0 to 9;6-year-olds).

The current findings concur with previous results that the conversational skills of preschool children improve with age, and DA also allows the investigation of narrative skills that develop mainly at school age (Gentilleau-Lambin et al., 2019). The increased and appropriate use of facial expressions was noted, confirming the increasingly sophisticated narrative skills.

The raters of this study observed the behaviors at random intervals to ensure holistic observation of pragmatic skills, and time-related improvements in eye gaze and turn-taking were observed. It is advised that SLPs score pragmatic behaviors at random intervals of a recorded interaction, ensuring that not only the initial or the last part of interaction is included (Owens, 2016). The comprehensive assessment potential of DA is highlighted in its ability to provide a naturalistic context for reliable assessment of language use.

Limitations and future research

Although the current study met its aim of providing a preliminary description of the spoken language skills of typically developing Afrikaans-speaking children using DA and providing length of sample guidelines for DA, some limitations should be mentioned.

The most notable limitation was the relatively small sample size, due to the fact that the study was regarded as a pilot study. The results obtained are not representative of the entire population that was investigated, as only six participants per age category could be included, which negatively affected the power of the results. Gender differences could also not be calculated using inferential statistics, due to the small sample size. In itself, the sample only represents middle-to-high class SES children, whose language skills may not be comparable to those of peers with low SES. Afrikaans is further known to have multiple dialects, and the current results have only focused on children from one geographical area (i.e., Tshwane), which may limit the generalizability of the data to other Afrikaans dialects.

The utterance separation guidelines were found to be limited and subjective. Although SUGAR procedures address utterance boundaries, variability in TNU was noted between the raters and may have affected MLU-w scores.

The length of sample has been proven to influence NDW scores (Charest et al., 2020). Using moving-average type-token ratio (MATTR) may be a more reliable measure of semantic skills. Although Charest et al. (2020) found that different measures of lexical diversity are appropriate for different clinical purposes, future research may provide developmental data for MATTR and determine the reliability of NDW against MATTR for the Afrikaans population.

The pragmatics analysis for the current study was conducted using the video recordings of the interactions (post-event analysis) to enable the researchers to calculate inter-rater reliability. However, the feasibility and reliability of real-time analysis may be explored in future research in an attempt to reduce the time needed to analyze the samples, while capitalizing on the comprehensive capabilities of DA to analyze language use.

Further research with larger samples should be conducted to provide reliable and representative developmental data. The inclusion of formal phonology measures in DA procedures may further increase the potential usefulness of the method as a clinical tool.

CONCLUSION

The study concluded that interactions with a 30-minute length provide a representative discourse sample for children between the ages of 3;6 and 9;6. The guidelines for the collection, transcription, and analysis of discourse samples using SUGAR procedures adjusted for Afrikaans, should be carefully followed to ensure the reliability of the samples when replicated in practice. The current pilot study obtained promising preliminary developmental data and clinical guidelines that hold potential for the future of fair language assessment and the reliable use of DA for Afrikaans.

ACKNOWLEDGMENTS

The authors wish to thank the following individuals for their invaluable contributions to this publication: Klarissa Nel, Dr. Annemarie Horn, Alex Winter, Dr. Maria du Toit and Dr. Elsie Naudé. This project was supported by the *"Suid-Afrikaanse Akademie vir Wetenskap en Kuns"* {South African Academy for Science and Art}.

REFERENCES

Adams, C. (2002). Practitioner review: The assessment of language pragmatics. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, *43*(8), 973–987. https://doi.org/10.1111/1469-7610.00226

Akoglu, H. (2018). User's guide to correlation coefficients. *Turkish Journal of Emergency Medicine*, *18*(3), 91–93. https://doi.org/10.1016/j.tjem.2018.08.001

Alvesson, M., & Kärreman, D. (2011). Decolonializing discourse: Critical reflections on organizational discourse analysis. *Human Relations*, *64*(9), 1121–1146. https://doi.org/10.1177/0018726711408629

Barratt, J., Khoza-Shangase, K., & Msimang, K. (2012). Speech-language assessment in a linguistically diverse setting: Preliminary exploration of the possible impact of informal 'solutions' within the South African context. *Speech-Language Assessment in a Linguistically Diverse Setting*, *59*(1), 34–44. https://doi.org/10.7196/SAJCD.51

Bedford, H., Walton, S., & Ahn, J. (2013). *Measures of child development: a review*. UCL Institute of Child Health: London, UK. https://discovery.ucl.ac.uk/1521166/

Bliss, L. S., McCabe, A., & Miranda, A. E. (1998). Narrative assessment profile: Discourse analysis for school-age children. *Journal of Communication Disorders*, *31*(4), 347–363. https://doi.org/10.1016/S0021-9924(98)00009-4

Boerma, T., Leseman, P., Timmermeister, M., Wijnen, F., & Blom, E. (2016). Narrative abilities of monolingual and bilingual children with and without language impairment: implications for clinical practice. *International Journal of Language and Communication Disorders*, *51*(6), 626–638. https://doi.org/10.1111/1460-6984.12234

Bornman, J., Romski, M., Tönsing, K., Sevcik, R., White, R., Barton-Hulsey, A., & Morwane, R. (2018). Adapting and translating the Mullen Scales of Early Learning for the South African context. *South African Journal of Communication Disorders*, *65*(1), 1–9. https://doi.org/10.4102/sajcd.v65i1.571

Bowen, C. (1998). *Developmental phonological disorders: A practical guide for families and teachers*. ACER Press.

Bowles, C. (2018). *Predicting expressive vocabulary change in young children Growing Up in Ireland*. University College Cork.

Bowles, R. P., Justice, L. M., Khan, K. S., Piasta, S. B., Skibbe, L. E., & Foster, T. D.

(2020). Development of the narrative assessment protocol-2: a tool for examining young children's narrative skill. *Language, Speech, and Hearing Services in Schools*, *51*(2), 390–404. https://doi.org/10.1044/2019_LSHSS-19-00038

Brothers, K. B., Page Glascoe, F., & Robertshaw, N. S. (2008). PEDS: Developmental milestones - An accurate brief tool for surveillance and screening. *Clinical Pediatrics*, *47*(3), 271–279. https://doi.org/10.1177/0009922807309419

Bruce Tomblin, J., Oleson, J. J., Ambrose, S. E., Walker, E., & Moeller, M. P. (2014). The influence of hearing aids on the speech and language development of children with hearing loss. *JAMA Otolaryngology - Head and Neck Surgery*, *140*(5), 403–409. https://doi.org/10.1001/jamaoto.2014.267

Byrd, C. T., Logan, K. J., & Gillam, R. B. (2012). Speech disfluency in school-age children's conversational and narrative discourse. *Language, Speech, and Hearing Services in Schools*, *43*(2), 153–163. https://doi.org/10.1044/0161-1461(2011/10-0068)

Casby, M. W. (2011). An examination of the relationship of sample size and mean length of utterance for children with developmental language impairment. *Child Language Teaching and Therapy*, *27*(3), 286–293. https://doi.org/10.1177/0265659010394387

Chambers, M., Bliss, K., & Rambur, B. (2020). Recruiting research participants via traditional snowball vs facebook advertisements and a website. *Western Journal of Nursing Research*, *42*(10), 846–851. https://doi.org/10.1177/0193945920904445

Channell, M. M., Loveall, S. J., Conners, F. A., Harvey, D. J., & Abbeduto, L. (2018). Narrative language sampling in typical development: implications for clinical trials. *American Journal of Speech-Language Pathology*, *27*(1), 123–135. https://doi.org/10.1044/2017_AJSLP-17-0046

Charest, M., Skoczylas, M. J., & Schneider, P. (2020). Properties of lexical diversity in the narratives of children with typical language development and developmental language disorder. *American Journal of Speech-Language Pathology*, *29*(4), 1866–1882. https://doi.org/10.1044/2020_AJSLP-19-00176

Cicchetti, D. V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed

and standardized assessment instruments in psychology. *Psychological Assessment*, *6*(4), 284–90.

Cohen, J. (1969). *Statistical power analysis for the behavioral sciences.* Academic Press.

De Lamo White, C., & Jin, L. (2011). Evaluation of speech and language assessment approaches with bilingual children. *International Journal of Language and Communication Disorders*, *46*(6), 613–627. https://doi.org/10.1111/j.1460-6984.2011.00049.x

de Villiers, P. (2004). Assessing pragmatic skills in elicited production. *Seminars in Speech and Language*, *25*(1), 57–71. https://doi.org/10.1055/s-2004-824826

Domingo Villarroel, J., Minon, M., & Nuno, T. (2011). The origin of counting: A study of the early meaning of “one”, “two” and “three” among Basque- and Spanish-speaking children. *Springer Science + Business Media*. https://doi.org/10.1007/s

Ebert, K. D. (2020). Language sample analysis with bilingual children. *Topics in Language Disorders*, *40*(2), 182–201. https://doi.org/10.1097/tld.0000000000000209

Ebert, K. D., & Scott, C. M. (2014). Relationships between narrative language samples and norm-referenced test scores in language assessments of school-age children. *Language, Speech, and Hearing Services in Schools*, *45*, 337–350. https://doi.org/10.1044/2014_LSHSS-14-0034

ELAN (Version 6.1) [Computer software]. (2021). Nijmegen: Max Planck Institute for Psycholinguistics. Retrieved from https://archive.mpi.nl/tla/elan".

Farahani, M. V. (2013). The role of discourse analysis in translation. *International Journal of Applied Linguistics and English Literature*, *2*(1), 112–116. https://doi.org/10.7575/ijalel.v.2n.1p.112

Gavin, W. J., & Giles, L. (1996). Sample size effects on temporal reliability of language sample measures of preschool children. *Journal of Speech, Language, and Hearing Research*, *39*(6), 1258–1262. https://doi.org/10.1044/jshr.3906.1258

Geertsema, S. (2016). *Application of principles of motor learning in the treatment of speech sound disorders.* [Unpublished Doctoral Dissertation, University of Pretoria].

Gentilleau-Lambin, P., Nicli, J., Richard, A. F., Macchi, L., Barbeau, C., Nguyen, S.,

Medjkane, F., & Lemaître, M. P. (2019). Assessment of conversational pragmatics: A screening tool for pragmatic language impairment in a control population of children aged 6–12 years. *Archives de Pediatrie*, *26*(4), 214–219. https://doi.org/10.1016/j.arcped.2019.03.004

Glascoe, F. P. (2013). Parents' Evaluation of Developmental Status: Developmental Milestones (PEDS:DM). Retrieved from www.pedstest.com

Govindarajan, K., & Paradis, J. (2019). Narrative abilities of bilingual children with and without Developmental Language Disorder (SLI): Differentiation and the role of age and input factors. *Journal of Communication Disorders*, *77*(August 2018), 1–16. https://doi.org/10.1016/j.jcomdis.2018.10.001

Heilmann, J., Nockerts, A., & Miller, J. F. (2010). Language sampling: does the length of the transcript matter? *Language, Speech, and Hearing Services in Schools*, *41*(4), 393–404. https://doi.org/10.1044/0161-1461(2009/09-0023)

Hux, K., Sanger, D., Reid, R., & Maschka, A. (1997). Discourse analysis procedures: Reliability issues. *Journal of Communication Disorders*, *30*(2), 133–150. https://doi.org/10.1016/S0021-9924(96)00060-3

Imgrund, C. M., Loeb, D. F., & Barlow, S. M. (2019). Expressive language in preschoolers born preterm: Results of language sample analysis and standardized assessment. *Journal of Speech, Language, and Hearing Research*, *62*(4), 884–895. https://doi.org/10.1044/2018_JSLHR-L-18-0224

Kathard, H., & Pillay, M. (2013). Promoting change through political consciousness: A South African speech-language pathology response to the World Report on Disability. *International Journal of Speech-Language Pathology*, *15*(1), 84–89. https://doi.org/10.3109/17549507.2012.757803

Kramer, C. A., James, S. L., & Saxman, J. H. (1979). A comparison of language samples elicited at home and in the clinic. *The Journal of Speech and Hearing Disorders*, *44*(3), 321–30.

Leedy, P. D., & Ormrod, J. E. (2020). *Practical Reserach: Planning and Design*. Pearson Education Limited.

Lotter, E. C. (1974). *'n Ondersoek na die ontwikkeling van artikulasie by die Afrikaanssprekende kind met die oog op die opstel van 'n geskikte artikulasietoets*. [MA dissertation, University of Pretoria]. https://repository.up.ac.za/handle/2263/29411?show=full

Mahomed-Asmail, F., Swanepoel, d., Eikelboom, R. H., Myburgh, H. C., & Hall, J., 3rd (2016). Clinical Validity of hearScreen™ Smartphone Hearing Screening for School Children. *Ear and hearing*, *37*(1), 11–17. https://doi.org/10.1097/AUD.0000000000000223

Manning, B. L., Harpole, A., Harriott, E. M., Postolowicz, K., & Norton, E. S. (2020). Taking language samples home: Feasibility, reliability, and validity of child language samples conducted remotely with video chat versus in-person. *Journal of Speech, Language, and Hearing Research*, *63*(12), 3982–3990. https://doi.org/10.1044/2020_JSLHR-20-00202

Moonsamy, S., & Kathard, H. (2015). *Speech-Language therapy in a school context: Principles and practices* (1st ed.). Van Schaik Publishers.

Oosthuizen, H., & Southwood, F. (2009). Methodological issues in the calculation of mean length of utterance. *The South African Journal of Communication Disorders*, *56*, 76–87. https://doi.org/10.4102/sajcd.v56i1.194

Orizaba, L., Gorman, B. K., Fiestas, C. E., Bingham, G. E., & Terry, N. P. (2020). Examination of narrative language at microstructural and macrostructural levels in Spanish-speaking preschoolers. *Language, Speech, and Hearing Services in Schools*, *51*(2), 428–440. https://doi.org/10.1044/2019_LSHSS-19-00103

Owens, R. E. (2016). *Language development: An introduction* (9th ed.). Pearson Education Limited.

Pascoe, M., Rogers, C., & Norman, V. (2013). Are we there yet? On a journey towards more contextually relevant resources in speech-language therapy and audiology. *The South African Journal of Communication Disorders, 60*, 2–9. https://doi.org/10.7196/sajcd.256

Pavelko, S. L., & Owens, R. E. (2017). Sampling utterances and grammatical analysis revised (SUGAR): New normative values for language sample analysis measures. *Language, Speech, and Hearing Services in Schools*, *48*(3), 197–215. https://doi.org/10.1044/2017_LSHSS-17-0022

Pavelko, S. L., Owens, R. E., Ireland, M., & Hans-Vaughn, D. L. (2016). Use of language sample analysis by school-based SLPs: results of a nationwide survey. *Language, Speech, and Hearing Services in Schools*, *47*, 246–258. https://doi.org/10.1044/2016_LSHSS-15-0044

Pezold, M. J., Imgrund, C. M., & Storkel, H. L. (2020). Using computer programs for

language sample analysis. *Language, Speech, and Hearing Services in Schools*, *51*(1), 103–114. https://doi.org/10.1044/2019_LSHSS-18-0148

Prutting, C. A., & Kirchner, D. M. (1987). A clinical appraisal of the pragmatic aspects of language. *The Journal of Speech and Hearing Disorders*, *52*(2), 105–119. https://doi.org/10.1044/jshd.5202.105

Saenz, T. I., & Huer, M. B. (2003). Testing strategies involving least biased language assessment of bilingual children. *Communication Disorders Quarterly*, *24*(4), 184–193. https://doi.org/10.1177/15257401030240040401

Shipley, K. G., & McAfee, J. G. (2016). *Assessment in Speech-Language Pathology* (5th ed.). Cengage Learning.

Southwood, F., & Russell, A. F. (2004). Comparison of conversation, freeplay, and story generation as methods of language sample elicitation. *Journal of Speech, Language, and Hearing Research*, *47*(2), 366–376. https://doi.org/10.1044/1092-4388(2004/030)

Southwood, F., & Van Dulm, O. (2015). The challenge of linguistic and cultural diversity: Does length of experience affect South African speech-language therapists' management of children with language impairment? *South African Journal of Communication Disorders*, *62*(1), E1–E14. https://doi.org/10.4102/sajcd.v62i1.71

Spencer, E., Bryant, L., & Colyvas, K. (2020). Minimizing variability in language sampling analysis: A practical way to calculate text length and time variability and measure reliable change when assessing clients. *Topics in Language Disorders*, *40*(2), 166–181. https://doi.org/10.1097/TLD.0000000000000212

Squires, B., Bird, E. K. R., & Cahill, P. (2020). "Undating" and "quarter ponies": Comparing the use of derived words and compounds across discourse types and age groups. *Language, Speech, and Hearing Services in Schools*, *51*(3), 761–777. https://doi.org/10.1044/2020_LSHSS-19-00076

Tilstra, J., & McMaster, K. (2007). Productivity, fluency, and grammaticality measures from narratives: potential indicators of language proficiency? *Communication Disorders Quarterly*, *29*(1), 43–53.

Tommerdahl, J., & Kilpatrick, C. D. (2014). The reliability of morphological analyses in language samples. *Language Testing*, *31*(1), 3–18. https://doi.org/10.1177/0265532213485570

van der Linde, J. (2015). *Developmental screening and communication delays in infants: A South African primary health care perspective*. [Doctoral Dissertation, University of Pretoria]. https://repository.up.ac.za/handle/2263/53474?show=full.

van der Merwe, M. N., Mosca, R., Swanepoel, D. W., Glascoe, F. P., & van der Linde, J. (2017). Early detection of developmental delays in vulnerable children by community care workers using an mHealth tool. [MA dissertation, University of Pretoria]. https://repository.up.ac.za/handle/2263/71437

van Dulm, O. (2007). *The grammar of English-Afrikaans code switching: A feature checking account.* [Doctoral Dissertation: Radboud Universiteit Nijmegen]. http://www.lotpublications.nl/publish/articles/002423/bookpart.pdf

Van Dulm, O., & Southwood, F. (2014). Child language assessment and intervention in multilingual and multicultural South Africa: Findings of a national survey. *Stellenbosch Papers in Linguistics*, *42*(0), 55. https://doi.org/10.5774/42-0-147

Verdon, S., McLeod, S., & Wong, S. (2015). Supporting culturally and linguistically diverse children with speech, language and communication needs: Overarching principles, individual approaches. *Journal of Communication Disorders*, *58*, 74–90. https://doi.org/10.1016/j.jcomdis.2015.10.002

4. DISCUSSION AND CONCLUSION

Chapter aim:

This chapter aims to provide a summary of the research findings and to discuss the theoretical and clinical implications The research is critically evaluated and recommendations for future research are provided.

4.1. Summary of the results and clinical implications

Currently, there is limited developmental data and assessment methods for the spoken language skills of Afrikaans-speaking children (Oosthuizen & Southwood, 2009; Southwood & Russell, 2004). The existing evidence focusses on morphosyntactic skills (Oosthuizen & Southwood, 2009; Southwood & Russell, 2004), with limited exploration in the areas of phonology (Geertsema, 2016; Lotter, 1974), and no published developmental data for the content and use of language that we are aware of. The widespread use of unvalidated measures impedes reliable language assessment for Afrikaans-speaking children (Van Dulm & Southwood, 2014). LSA has been referred to as the golden standard for natural language assessment (Channell et al., 2018; Heilmann et al., 2010), however, discrepancies in proposed length of sample guidelines and the lack of developmental data hinder the efficient use thereof in practice (Pavelko et al., 2016; Pavelko & Owens, 2017).

Thirty typically developing Afrikaans-speaking children between the ages of 3;6 and 9;6 (stratified by age and gender) participated in one-hour interactions with a qualified SLT. The naturalistic interactions were transcribed and analysed using the adapted procedures for LSA. This study obtained preliminary clinical guidelines for length of sample in addition to developmental data of Afrikaans-speaking children.

Length of sample

An interaction of 30 minutes, yielding a sample of a mean of 184 utterances, was found to be representative of the spoken language skill of children from ages 3;6 to 9;6. Previous studies suggest that when using unstructured conversational and narrative tasks to elicit language, larger samples may be necessary (Heilmann et al., 2010; Gavin & Giles, 1996). In his seminal work, David Crystal, and colleagues (1976) reported comparable results to the current study. They found that a 30-minute

interaction that yields around 100 to 200 utterances (compared to 163 to 250 utterances in the current study) is sufficient to provide a representative overview of spoken language skills (Crystal et al., 1976; Southwood & Russell, 2004). Similarly, another study conducted in South Africa reported that that larger samples are necessary to yield representative language samples (Oosthuizen & Southwood, 2009).

In previous research conducted using the alternate method of MLU-w-calculation as was used for the current study, it was recommended that SLTs use samples of at least 100 utterances as opposed to the traditionally recommended 50 utterances (Oosthuizen & Southwood, 2009). The current study yielded more than 100 utterances in a 30-minute sample. The argument for the use of longer samples when calculating lexical measures is supported by an earlier study that compared two 100-utterance samples (Cole et al., 1989). These authors reported that their results indicated that a second 100-utterance sample provide up to 27% more lexical information than an initial 100-utterance sample (Cole et al., 1989). Since both lexical (NDW) and morphosyntactic (MLU) measures were calculated in the current study, results from previous studies support the current results that longer samples are needed to reliably obtain a representative discourse sample.

In contrast, some studies have found that smaller samples are representative and reliable (Guo & Eisenberg, 2015; Heilmann et al., 2010; Tilstra & McMaster, 2007). Comparable to the current study, a previous study used conversational and narrative language samples (Heilmann et al., 2010). The authors did not provide definitive guidelines regarding length of sample, but compared 1-minute, 3-minute and 7-minute samples. Another study found that for the measures of TNW and NDW, 1-to 2-minute highly structured narratives were reliable (Tilstra & McMaster, 2007). The support for shorter samples found by Tilstra & McMaster (2007) could however not be compared to the current study in a reliable manner, as the elicitation methods differed. Other researchers have concluded that conversational samples collected in the context of parent-elicited free play, requires a minimum sample of 10 minutes to compute lexical measures (Guo & Eisenberg, 2015). It is important to recognise that few studies attempted to describe form, content and use of language,

and the variability in length of sample guidelines may be attributed to the type and nature of measures for which reliability was determined (Tommerdahl & Kilpatrick, 2014). In the current study, the larger sample length that was found to be representative may be ascribed to the variety of measures computed from LSA.

Limited evidence was found for the size of intervals used in comparative research to determine length of sample guidelines. A previous study compared 1-minute, 3-minute and 7-minute samples and concluded that there were no significant differences between these samples (Heilmann et al., 2010). The current results however indicated that there were no significant differences between samples at one time segment and the segment immediately following it (i.e., 5 vs 10 min; 10 vs 20 min; 20 vs 30 min; 30 vs 40 min and 40 vs 60 min) for any of the measures in all age categories. Thus, instead of using the smaller intervals of a maximum of 20 minutes, which indicated no significant differences, the current study explored longer intervals up to 30 minutes (30 vs 60 min). When comparing the 5-minute sample to a 60-minute sample, significant differences (p = 0.000-0.003) were found for all the measures. Similar results were found when comparing 10 minutes to 60 minutes (p = 0.001-0.002) and 20 minutes to 60 minutes (p = 0.018-0.028). However, from 30 minutes, the comparison to 60 minutes indicated non-significant differences. Therefore, the results obtained here indicate that longer intervals may reveal more reliable guidelines for the representativeness of samples.

Nonetheless, from the results from the current study, it was evident that from 30 minutes onwards, the measures stabilised, and no significant differences existed between measures at 30 minutes and 60 minutes, save for one. The NDW/m measure for the eldest group differed significantly between 30 minutes and 60 minutes (p = 0.045). NDW is known to be sensitive to the length of sample variables (Charest et al., 2020), which is confirmed by the results above. In addition, this result may also indicate the lexical developmental trajectory evident in increased NDW scores in the eldest group, as the younger groups had no significant differences for the NDW/m in the 30 to 60-minute comparisons.

The initial lack of familiarity was another factor that could possibly have influenced the length of sample. The "warm-up effect" may suggest that the first part of a language sample may skew the results as clinicians differ in their interaction styles when trying to overcome the unfamiliarity influence on the interaction and hence the language that is elicited (Heilmann et al., 2010). Current results support the use of samples from 0 minutes, as no significant differences were noted at 30 minutes and 40 minutes i.e., the sample from 0-30 minutes (sample 30 A) versus 10-40 minutes (sample 30 B) [p_{MLU} = 0.156; p_{NDW} = 0.156; p_{PP} = 0.156] and the 0-40 minutes (40 A) versus 10- 50 minutes (40 B) [p_{MLU} = 1.000; p_{NDW} = 0.438; p_{PP} = 0.688].

The current study demonstrated that an interaction, lasting 30 minutes and which includes elements of conversation, free play, and personal event narratives, suffices in providing a representative language sample. In clinical settings, language assessment typically takes between 45 minutes to 90 minutes, varying between SLTs. The natural 30-minute interaction could thus provide SLTs with an opportunity to observe other language and behavioural skills, informally, and to gain a perception of a child's everyday communication functioning. The remainder of the assessment appointment could then be used to assess specific receptive language skills or literacy skills.

Considering that a representative sample for LSA only requires 30 minutes to elicit and obtain reliable and comprehensive language information for all the domains of language (i.e., form, content, and use), this guideline may encourage the use of this informal method of language assessment in clinical (and research) practice.

The spoken language skills of typically developing Afrikaans-speaking children

This study successfully met its aim of obtaining preliminary developmental data for Afrikaans. Future research should supplement the current results to establish representative developmental data. Developmental data of all language domains were obtained, emphasizing the usefulness of LSA as a measure for all domains (Bowles et al., 2020; Heilmann et al., 2010; Manning et al., 2020). Age-related

changes in all the LSA measures (MLU, NDW, PP) included in the current study were noted.

Morphosyntactic skills

Using MLU to describe morphosyntactic skills has long been recognised as a reliable measure of overall language ability (Heilmann et al., 2010; Manning et al., 2020; Pavelko & Owens, 2017). The results indicate the expected developmental trajectory for morphosyntactic skills with age-related increases in MLU-w scores. For example, the difference in MLU-w between the youngest group and the eldest group was significant (p= 0.009). Similarly, the difference between the 4;0-4;11 cohort, and the 7;0-7;6 cohort was also significant (p = 0.004).

The alternate method of MLU-w calculation (Section 2.7 and Appendix F) that was used in the current study, allows for the control on discourse variables, such as single-morpheme responses and self-repetition to be excluded from the transcriptions (Oosthuizen & Southwood, 2009). This has been proven to address discourse bias that may influence MLU measures in discourse samples (Oosthuizen & Southwood, 2009), providing a more accurate representation of spoken language skills. It further calculates MLU in words as opposed to the commonly used method of MLU in morphemes (MLU-m; Pavelko & Owens, 2017). When calculating MLU-m, *ad hoc* decisions about morpheme-separation may influence the reliability of the clinical use thereof (Oosthuizen & Southwood, 2009). Therefore, using MLU-w may have provided more reliable developmental data in the current study. The results from an earlier study that collected preliminary normative data for 5-year-old Afrikaans-speaking males (Southwood & Russell, 2004) differed from the MLU results of the current study [MLU-m conversational = 3.71; free play = 3.76; story generation = 4.97 compared to MLU-w (5;0-5;11) in the current study = 8.50]. These differences may possibly be attributed to the use of MLU-m in the previous study, that shorter samples were elicited (15 minutes compared to 30 minutes in the current study), and the all-male sample (the current study also included female participants) (Southwood & Russell, 2004). A combination of conversational, free play and story generation were used in the current study using a child-led approach as opposed to the previous study which used each language elicitation method (conversation; free

play; story generation) in isolation and a structured clinician-led approach (Southwood & Russell, 2004). These important methodological differences underline the influences that different methods of language elicitation and calculation of measures for spoken language skills may have on the results that SLTs obtain. A thorough description of methods used throughout should thus be considered as pivotal to ensure reliable and generalisable research results and practices. The current results [MLU-w $(6;0\text{-}6;11)_{MEAN}$ = 7.89] however compares well to the individual preliminary data that exists for Afrikaans-speaking 6-year-olds (MLU-w = 8.02) (Oosthuizen & Southwood, 2009).

For all other age groups, the age-related developmental trajectory of MLU-w was found to be comparable with normative data from other languages such as English (Pavelko & Owens, 2017). These results are encouraging and concur with previous presumptions that Afrikaans as a Germanic language may be morphologically similar to English (Southwood & Russell, 2004). The reliability of this preliminary correspondence to the current results should be established in future research.

Phonology

Some evidence regarding the speech sound development of Afrikaans-speaking children has been discussed in the literature (Geertsema, 2016; Lotter, 1974). Informal descriptions of phonological and articulation errors were compared to the age of acquisition guidelines (Geertsema, 2016). The development of the /s/ and voiced alveolar trill /r/ sound is only expected at the ages of 6-to-7-years-old (Geertsema, 2016). The results in the current study were found to be aligned with the expected mastery of these sounds, except for one participant in the eldest age category who presented with an /r/ distortion that is not deemed age-appropriate for his age (i.e., 8;2 years old).

The phonological patterns noted for Afrikaans-speaking children decreased only slightly later than the norms for English age-matched peers (Bowen, 1998). For example, according to these norms, final consonant deletion should diminish by 3;3, however, according to the current results it is still present up to 4;1. This result

provides preliminary evidence that phonological patterns in Afrikaans may not be comparable to that of other languages (in contrast to morphosyntactic skills that appeared to correlate to English) and prompts the investigation into in-depth developmental phonological data for this population. This results therefore provides a clear direction as to where future research could focus to expand the current body of knowledge.

Semantic skills

Semantic skills could also be analysed using LSA by calculating the NDW, a commonly used measure for lexical diversity (Ebert, 2020; Ebert & Scott, 2014; Imgrund et al., 2019; Pavelko & Owens, 2017). When comparing the results from each age category, the rapid development of semantic skills and refined narrative skills is evident (Owens, 2016). The NDW used increases for each age category (from 231.50 different words for the youngest group to 421.00 different words for the eldest group) which indicates the growth of vocabulary throughout these ages and therefore emphasizes the usefulness of NDW as a metric of language skill (Charest et al., 2020).

When children talk about their own experiences (personal event narratives and story generation), their lexical diversity may be greater as context familiarity facilitates lexical diversity and semantic complexity (Channell et al., 2018; Southwood & Russell, 2004; Squires et al., 2020). The current results concur as the NDW mean score increased as time progressed since the variety of activities and materials prompted the use of a wider range of vocabulary.

In a recent study, the NDW measures were calculated based on six stories from the Edmonton Narrative Norms Instruments (Charest et al., 2020) and the structured nature of these narratives yielded much smaller samples (200 words) compared to the current study (30 minutes or 1337.24 words). The authors concluded that NDW may be sensitive to the length of sample and that the moving-average type-token ratio (MATTR) was the only semantic measure that had no relationship to the number of utterances or sample length (Charest et al., 2020). When considering the plausibility of using the LSA procedures described here, it is

important again to consider the influences of sample length on the opportunity for a child to produce language representative of their spoken language skills. Therefore, these results support the use of a sample of at least 30 minutes.

No published data for NDW in the Afrikaans-speaking population that we are aware of exist. The current results may therefore be used as a springboard to further explore semantic skills and lexical diversity in the Afrikaans-speaking population. It also contributed as developmental data for the content of language, as age-related development of lexical skills was found. The data may be useful in future as well, to obtain various measures (e.g., NDW vs MATTR) for lexical diversity to provide more reliable and clinically relevant developmental data in this domain.

Pragmatics

During 'The Exhibitor' stage (ages 3 to 5) there is a rapid development of pragmatic skills (Owens, 2016). Refinement and mastery of the social use of language only become evident during the 'Expert stage' (ages 6 to 12) of the developmental schemas (Owens, 2016). LSA also enabled exploration of the participants' use of language. The current preliminary results indicated age-related development and mastery of pragmatic skills before the age of 10 years, as reported before (Gentilleau-Lambin et al., 2019). The stabilisation of pragmatic skills with age can be seen in the smaller variation (i.e., in terms of standard deviation [SD] of scores) of the pragmatic protocol scores as children mature ($SD_{3;6\text{-}3;11}$ = 2.01 versus $SD_{7;0\text{-}9;6}$ = 0.80).

The results show steady increases in pragmatic protocol scores with improved verbal aspects, such as lexical specificity and accuracy, with age. This is most likely due to the maturation and development of more sophisticated pragmatic skills and vocabulary development. This result further concurred with those reported for semantic skills, which also indicated age-related maturation in lexical skills. The paralinguistic aspects remain relatively stable (93,33–100%) throughout the chronological progression. In the 5;0-5;11 age group, verbal aspects increase while paralinguistic aspects decrease. The paralinguistic aspects of unintelligibility and

disfluency reduced with age, as fewer phonological processes and developmental disfluencies were observed.

Nonverbal aspects such as foot/leg and hand/arm movement became more appropriate in the older age groups, while eye gaze also became more consistent and appropriate with age. The slightly lower nonverbal aspects score for the two older categories (6;0-6;11 and 7;0-9;6) is attributed to many participants (*n* = 7) opting for the interaction to take place at a tabletop. This preference diminished the potential observability of natural physical proximity as the children were sitting at appropriate physical proximity due to the table layout rather than due to appropriate pragmatic skills. The initial overall pragmatic scores of typically developing Afrikaans-speaking children, varying between 86.11% and 100%, indicate the sophisticated language use of this population.

The raters of the pragmatic skills observed the behaviours at random intervals to ensure holistic observation of pragmatic skills, and time-related improvements in eye gaze and turn-taking were observed. It is advised that SLPs score pragmatic behaviours at random intervals of a recorded interaction, ensuring that not only the initial or the last part of interaction is included (Owens, 2016). The comprehensive assessment potential of LSA is highlighted in its ability to provide a naturalistic context for reliable assessment of language use.

4.2. Critical evaluation

A critical evaluation of the research allowed for the assessment of the strengths and limitations of the study.

Strengths

The current research provided preliminary developmental data for a wide age range of typically developing Afrikaans-speaking children. The developmental data included data from all language domains, including the often-overlooked use of language. The study revealed urgent gaps in the literature regarding the Afrikaans population, which may draw the attention of other experts in the field to this population as well as other South African language populations. The procedures

described for LSA were well-outlined according to the recommendations of Finestack et al. (2014), to ensure a thorough description of all confounding variables that may influence the generalisability and reliability of the replication of these procedures in practice.

Apart from developmental data and well-described procedures, the new length of sample guidelines that concur with previous notions for the need for longer samples was obtained. Existing guidelines that suggest the counting of utterances or words, or of sample duration suggestions that include only the child's utterances, may increase the time-consuming nature of LSA identified earlier. This would entail that SLTs have to count the utterances or words only after transcription to determine whether a representative sample was obtained. The guideline for a 30-minute interaction described here is more clinically translatable as the number of utterances or words cannot reliably be measured while an interaction is taking place.

Limitations

Although the current study met its aim of describing the spoken language skills of typically developing Afrikaans-speaking children using LSA and providing the length of sample guidelines for LSA, some limitations should be mentioned.

The most notable limitation was the relatively small sample size. The results obtained are not representative of the entire population that was investigated, as only six participants per age category could be included. The study should therefore be viewed as a pilot study. Gender differences could also not be calculated using inferential statistics due to the small sample size.

The sample in itself only represents middle-to-high class SES individuals, which may not be comparable to individuals with low SES. Afrikaans is further known to have multiple dialects and the current results have only focused on children from one geographical area (i.e., Tshwane), which may limit the generalisability of the data to other Afrikaans dialects.

The utterance separation guidelines were found to be limited and subjective. Although SUGAR procedures address utterance boundaries, variability in TNU was noted between the raters that may have affected MLU scores. The length of a sample has been proven to influence NDW scores, using MATTR may be a more reliable measure of semantic skills.

4.3. Future research

In future, large-scale investigations of typically developing Afrikaans-speaking children, retaining both genders, should be conducted to establish reliable and representative developmental data. Children from different SES backgrounds and who speak a variety of Afrikaans-dialects should be considered, as such a heterogenous sample would increase the generalisability of results. Further research should explore the potential of LSA to diagnose language and related disorders, by comparing the results from typically developing children to peers with language disorders. Sampling context differences, for example comparing the home environment to a clinical one, may also be investigated in future to ensure the generalisability of the results across contexts. This contextual focus may further be extended to investigate the reliability of tele-practice LSA measures for which the need has been magnified during the COVID-19 pandemic (Manning et al. 2020). Preliminary evidence has shown that no significant differences were found in language measures or transcription reliability between video chat compared to in-person language samples (Manning et al., 2020). This holds promise, also for vast countries such as South Africa where the majority of SLTs are located in and around major cities, negatively impacting service delivery in rural areas.

Code-switching is known as the switching between two or more languages during discourse and is a common phenomenon in South African conversations considering our multilingual and multicultural population (van Dulm, 2007). Although it was beyond the scope of the current study to investigate the code-switching phenomena that occurred frequently in the discourse of the participants, further research into the factors that contribute to code-switching language should be conducted. Future research may also explore the influence of code-switching on the language measures that were calculated for the current study.

The reliability of the measures used should be investigated further. MATTR as a measure that is not related to the length of sample may be investigated and the reliability of NDW against MATTR should be determined. The inclusion of formal phonology measures and phonetic transcriptions in the LSA procedures may further increase the utility thereof while providing vital developmental data for phonology. The pragmatics analysis for the current study was conducted using the video recordings of the interactions after they took place to enable the researchers to calculate inter-rater reliability. However, the feasibility and reliability of real-time analysis may be explored in future research to further reduce the time of analyses procedures, while utilizing the comprehensive capabilities of LSA to analyse language use.

The lack of formal assessment materials for many of the South African languages and dialects, including Afrikaans (Southwood & Van Dulm, 2015) results in the use of alternative methods for language assessment. The common practice in multilingual contexts are using unvalidated or translated assessment tools, or spontaneous language samples (Southwood & Russell, 2004). However, there is limited uniformity in language sampling procedures for elicitation, transcription and analysis. Despite this, many South African SLTs rely on language samples for the monitoring of progress and diagnostic purposes (Southwood & Russell, 2004). The far-reaching implications are unreliable and unfair language assessment methods for multilingual children. The LSA methods described here should inform future research into the language assessment methods for all under-resourced South African languages to ensure linguistically appropriate and culturally responsive assessments.

4.4. Conclusion

The current study illuminated the urgent need for clearer length of sample guidelines and developmental language data in Afrikaans for spoken language skills. The use of LSA bridges an important gap in current language assessment methods for South African languages as an informal measure that assesses language in a naturalistic manner. LSA provided the opportunity to assess all the domains of language and to argue the length of sample that would be representative to assess

each domain. It concluded that for Afrikaans-speaking children between 3;6 and 9;6, a 30-minute interaction yields a representative sample to assess language form, content and use. The preliminary developmental data indicated clear age-related maturation of morphosyntactic skills, semantic skills and pragmatic skills of Afrikaans-speaking children. The current study obtained promising preliminary developmental data and clinical guidelines that hold potential for the future of fair language assessment and the reliable use of LSA for Afrikaans.

5. REFERENCES

Adams, C. (2002). Practitioner review: The assessment of language pragmatics. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, *43*(8), 973–987. https://doi.org/10.1111/1469-7610.00226

Akoglu, H. (2018). User's guide to correlation coefficients. *Turkish Journal of Emergency Medicine*, *18*(3), 91–93. https://doi.org/10.1016/j.tjem.2018.08.001

Alvesson, M., & Kärreman, D. (2011). Decolonializing discourse: Critical reflections on organizational discourse analysis. *Human Relations*, *64*(9), 1121–1146. https://doi.org/10.1177/0018726711408629

American Psychological Association. (2019). Publication Manual of the American Psychological Association (7th ed.). Retrieved from vbk://9781433832185

Arifin, W. N. (2020). *Sample size calculator*. https://wnarifin.github.io/ssc/ssicc.html

Arlman-Rupp, A., Van Niekerk de Haan, D., & Van de Sandt-Koenderman, M. (1976). Brown's early stages: Some evidence from Dutch. *Journal of Child Language*, 267–274.

Barratt, J., Khoza-Shangase, K., & Msimang, K. (2012). Speech-language assessment in a linguistically diverse setting: Preliminary exploration of the possible impact of informal 'solutions' within the South African context. *Speech-Language Assessment in a Linguistically Diverse Setting*, *59*(1), 34–44. https://doi.org/10.7196/SAJCD.51

Bedford, H., Walton, S., & Ahn, J. (2013). Measures of child development: a review. *June*, 1–104. https://discovery.ucl.ac.uk/id/eprint/1521166/1/Bedford_Measures_Child_Development.pdf

Bliss, L. S., McCabe, A., & Miranda, A. E. (1998). Narrative assessment profile: Discourse analysis for school-age children. *Journal of Communication Disorders*, *31*(4), 347–363. https://doi.org/10.1016/S0021-9924(98)00009-4

Boerma, T., Leseman, P., Timmermeister, M., Wijnen, F., & Blom, E. (2016). Narrative abilities of monolingual and bilingual children with and without language impairment: implications for clinical practice. *International Journal of Language and Communication Disorders*, *51*(6), 626–638. https://doi.org/10.1111/1460-6984.12234

Bornman, J., Romski, M., Tönsing, K., Sevcik, R., White, R., Barton-Hulsey, A., &

Morwane, R. (2018). Adapting and translating the Mullen Scales of Early Learning for the South African context. *South African Journal of Communication Disorders*, *65*(1), 1–9. https://doi.org/10.4102/sajcd.v65i1.571

Bornman, J., Sevcik, R. A., Romski, M. A., & Pae, H. K. (2010). Successfully translating language and culture when adapting assessment measures. *Journal of Policy and Practice in Intellectual Disabilities*, *7*(2), 111–118. https://doi.org/10.1111/j.1741-1130.2010.00254.x

Bowen, C. (1998). *Developmental phonological disorders: A practical guide for families and teachers*. ACER Press.

Bowles, C. (2018). *Predicting Expressive Vocabulary Change in Young Children Growing Up in Ireland*. [MA thesis; University College Cork].

Bowles, Justice, Khan, Piasta, Skibbe, & Foster. (2020). Development of the Narrative Assessment Protocol-2: A tool for examining young children's narrative skill. *Language, Speech, and Hearing Services in Schools*, *51*(2), 390–404. https://doi.org/10.1044/2019_LSHSS-19-00038

Brothers, K. B., Page Glascoe, F., & Robertshaw, N. S. (2008). PEDS: Developmental milestones - An accurate brief tool for surveillance and screening. *Clinical Pediatrics*, *47*(3), 271–279. https://doi.org/10.1177/0009922807309419

Brown, R. (1973). *A First Language: the Early Stages*. Harvard University Press.

Bruce Tomblin, J., Oleson, J. J., Ambrose, S. E., Walker, E., & Moeller, M. P. (2014). The influence of hearing aids on the speech and language development of children with hearing loss. *JAMA Otolaryngology - Head and Neck Surgery*, *140*(5), 403–409. https://doi.org/10.1001/jamaoto.2014.267

Byrd, C. T., Logan, K. J., & Gillam, R. B. (2012). Speech disfluency in school-age children's conversational and narrative discourse. *Language, Speech, and Hearing Services in Schools*, *43*(2), 153–163. https://doi.org/10.1044/0161-1461(2011/10-0068)

Casby, M. W. (2011). An examination of the relationship of sample size and mean length of utterance for children with developmental language impairment. *Child Language Teaching and Therapy*, *27*(3), 286–293. https://doi.org/10.1177/0265659010394387

Chambers, M., Bliss, K., & Rambur, B. (2020). Recruiting research participants via

traditional snowball vs facebook advertisements and a website. *Western Journal of Nursing Research*, *42*(10), 846–851. https://doi.org/10.1177/0193945920904445

Channell, M. M., Loveall, S. J., Conners, F. A., Harvey, D. J., & Abbeduto, L. (2018). Narrative language sampling in typical development: implications for clinical trials. *American Journal of Speech-Language Pathology*, *27*(1), 123–135. https://doi.org/10.1044/2017_AJSLP-17-0046

Charest, M., Skoczylas, M. J., & Schneider, P. (2020). Properties of lexical diversity in the narratives of children with typical language development and developmental language disorder. *American Journal of Speech-Language Pathology*, *29*(4), 1866–1882. https://doi.org/10.1044/2020_AJSLP-19-00176

Cicchetti, D. V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological Assessment*, *6*(4), 284–90.

Cole, K. N., Mills, P. E., & Dale, P. S. (1989). Examination of test-retest and split-Half reliability for measures derived from language samples of young handicapped children. *Language, Speech, and Hearing Services in Schools*, *20*(3), 259–268. https://doi.org/10.1044/0161-1461.2003.259

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.

Crystal, D., Fletcher, P., & Garman, M. (1976). The grammatical analysis of language disabilities. *Child Language*, 8–11.

De Lamo White, C., & Jin, L. (2011). Evaluation of speech and language assessment approaches with bilingual children. *International Journal of Language and Communication Disorders*, *46*(6), 613–627. https://doi.org/10.1111/j.1460-6984.2011.00049.x

de Villiers, P. (2004). Assessing pragmatic skills in elicited production. *Seminars in Speech and Language*, *25*(1), 57–71. https://doi.org/10.1055/s-2004-824826

Domingo Villarroel, J., Minon, M., & Nuno, T. (2011). The origin of counting: A study of the early meaning of “one”, “two” and “three” among Basque- and Spanish-speaking children. *Springer Science + Business Media*. https://doi.org/10.1007/s

Ebert, K. D. (2020). Language sample analysis with bilingual children. *Topics in Language Disorders*, *40*(2), 182–201.

https://doi.org/10.1097/tld.0000000000000209

Ebert, K. D., & Scott, C. M. (2014). Relationships between narrative language samples and norm-referenced test scores in language assessments of school-age children. *Language, Speech, and Hearing Services in Schools*, *45*(4), 337–50. https://doi.org/10.1044/2014_LSHSS-14-0034

Farahani, M. V. (2013). The role of discourse analysis in translation. *International Journal of Applied Linguistics and English Literature*, *2*(1), 112–116. https://doi.org/10.7575/ijalel.v.2n.1p.112

Finestack, L. H., Payesteh, B., Rentmeester Disher, J., & Julien, H. M. (2014). Reporting child language sampling procedures. *Journal of Speech, Language, and Hearing Research*, *57*(6), 2274–9. https://doi.org/10.1044/2014_JSLHR-L-14-0093

Gavin, W. J., & Giles, L. (1996). Sample size effects on temporal reliability of language sample measures of preschool children. *Journal of Speech, Language, and Hearing Research*, *39*(6), 1258–1262. https://doi.org/10.1044/jshr.3906.1258

Geertsema, S. (2016). *Application of principles of motor learning in the treatment of speech sound disorders.* [Unpublished Doctoral Dissertation, University of Pretoria].

Gentilleau-Lambin, P., Nicli, J., Richard, A. F., Macchi, L., Barbeau, C., Nguyen, S., Medjkane, F., & Lemaître, M. P. (2019). Assessment of conversational pragmatics: A screening tool for pragmatic language impairment in a control population of children aged 6–12 years. *Archives de Pediatrie*, *26*(4), 214–219. https://doi.org/10.1016/j.arcped.2019.03.004

Govindarajan, K., & Paradis, J. (2019). Narrative abilities of bilingual children with and without developmental language disorder (SLI): Differentiation and the role of age and input factors. *Journal of Communication Disorders*, *77*, 1–16. https://doi.org/10.1016/j.jcomdis.2018.10.001

Glascoe, F. P. (2013). Parents' Evaluation of Developmental Status: Developmental Milestones (PEDS:DM). Retrieved from www.pedstest.com

Gress, K. C., & Hill, E. A. (2018). Language difference or disorder: How do you know? *MinneTESOL Journal*, *Spring*, 1–11.

Guo, L., & Eisenberg, S. (2015). Sample length affects the reliability of language

sample measures in 3-year-olds: Evidence from parent-elicited conversational samples. *Language, Speech, and Hearing Services in Schools*, *46*(2), 141–153. https://doi.org/10.1044/2015

Heilmann, J., Miller, J. F., Iglesias, A., Fabiano-Smith, L., Nockerts, A., & Andriacchi, K. D. (2008). Narrative transcription accuracy and reliability in two languages. *Topics in Language Disorders*, *28*(2), 178–188. https://doi.org/10.1097/01.TLD.0000318937.39301.76

Heilmann, Nockerts, & Miller. (2010). Language sampling: Does the length of the transcript matter? *Language, Speech, and Hearing Services in Schools*, *41*(4), 393–404. https://doi.org/10.1044/0161-1461(2009/09-0023)

Hux, K., Sanger, D., Reid, R., & Maschka, A. (1997). Discourse analysis procedures: Reliability issues. *Journal of Communication Disorders*, *30*(2), 133–150. https://doi.org/10.1016/S0021-9924(96)00060-3

Imgrund, C. M., Loeb, D. F., & Barlow, S. M. (2019). Expressive language in preschoolers born preterm: Results of language sample analysis and standardized assessment. *Journal of Speech, Language, and Hearing Research*, *62*(4), 884–895. https://doi.org/10.1044/2018_JSLHR-L-18-0224

Kathard, H., & Pillay, M. (2013). Promoting change through political consciousness: A South African speech-language pathology response to the World Report on Disability. *International Journal of Speech-Language Pathology*, *15*(1), 84–89. https://doi.org/10.3109/17549507.2012.757803

Kramer, C. A., James, S. L., & Saxman, J. H. (1979). A comparison of language samples elicited at home and in the clinic. *The Journal of Speech and Hearing Disorders*, *44*(3), 321–30.

Leedy, P. D., & Ormrod, J. E. (2020). *Practical Research: Planning and Design*. Pearson Education Limited.

Longhurst, T. M., & Grubb, S. (1974). A comparison of language samples collected in four situations. *Language, Speech, and Hearing Services in Schools*, *5*(2), 71-78. https://doi.org/10.1044/0161-1461.0502.71

Longobardi, E., Spataro, P., Frigerio, A., & Rescorla, L. (2016). Gender differences in the relationship between language and social competence in preschool children. *Infant Behavior & Development*, *43*, 1–4. https://doi.org/10.1016/j.infbeh.2016.03.001

Lotter, E. C. (1974). *'n Ondersoek na die ontwikkeling van artikulasie by die Afrikaanssprekende kind met die oog op die opstel van 'n geskikte artikulasietoets*. [MA dissertation, University of Pretoria]. https://repository.up.ac.za/handle/2263/29411?show=full

Lovelace, K.E. (2019). *A comparison of two procedures for analyzing spontaneous language in preschool children with developmental language disorder.* [Bachelor's Thesis; The University of Arizona]. https://repository.arizona.edu/handle/10150/632819

Mahomed-Asmail, F., Swanepoel, de W., Eikelboom, R. H., Myburgh, H. C., & Hall, J. 3rd. (2016). Clinical validity of hearScreen™ smartphone hearing screening for school children. *Ear and Hearing*, *37*(1), 11–7. https://doi.org/10.1097/AUD.0000000000000223

Manning, B. L., Harpole, A., Harriott, E. M., Postolowicz, K., & Norton, E. S. (2020). Taking language samples home: Feasibility, reliability, and validity of child language samples conducted remotely with video chat versus in-person. *Journal of Speech, Language, and Hearing Research*, *63*(12), 3982–3990. https://doi.org/10.1044/2020_JSLHR-20-00202

Marsh, K. W. (2010). *The Performance of Rural Speakers of Non-Standard Afrikaans on the Diagnostic Evaluation of Language Variation*. [MA dissertation, Stellenbosch University]. http://hdl.handle.net/10019.1/5296

Mdlalo, T., Flack, P. S., & Joubert, R. W. (2019). The cat on a hot tin roof? Critical considerations in multilingual language assessments. *South African Journal of Communication Disorders*, *66*(1), 1–7. https://doi.org/10.4102/sajcd.v66i1.610

Miller, J., & Iglesias, A. (2012). Systematic Analysis of Language Transcripts (SALT) [Computer software]. Middleton, WI: SALT Software LLC.

Moonsamy, S., & Kathard, H. (2015). *Speech-Language Therapy in a school context: Principles and practices* (1st ed.). Van Schaik Publishers.

Neuman, W. L. (2014). Social research methods: Qualitative and quantitative approaches. In *Teaching Sociology* (Vol. 30, Issue 3). Pearson New International Edition. https://doi.org/10.2307/3211488

Oosthuizen, H., & Southwood, F. (2009). Methodological issues in the calculation of mean length of utterance. *The South African Journal of Communication Disorders*, *56*, 76–87. https://doi.org/10.4102/sajcd.v56i1.194

Orizaba, L., Gorman, B. K., Fiestas, C. E., Bingham, G. E., & Terry, N. P. (2020). Examination of narrative language at microstructural and macrostructural levels in spanish-speaking preschoolers. *Language, Speech, and Hearing Services in Schools*, *51*(2), 428–440. https://doi.org/10.1044/2019_LSHSS-19-00103

Owens, R. E. (2016). *Language Development: an Introduction* (9th ed.). Pearson.

Pascoe, M., Rogers, C., & Norman, V. (2013). Are we there yet? On a journey towards more contextually relevant resources in speech-language therapy and audiology. *The South African Journal of Communication Disorders*, *60*, 2–9. https://doi.org/10.7196/sajcd.256

Pavelko, S. L., & Owens, R. E. (2017). Sampling utterances and grammatical analysis revised (SUGAR): New normative values for language sample analysis measures. *Language, Speech, and Hearing Services in Schools*, *48*(3), 197–215. https://doi.org/10.1044/2017_LSHSS-17-0022

Pavelko, S. L., Owens, R. E. J., Ireland, M., & Hahs-Vaughn, D. L. (2016). Use of language sample analysis by school-based slps: results of a nationwide survey. *Language, Speech, and Hearing Services in Schools*, *47*(3), 246–58. https://doi.org/10.1044/2016_LSHSS-15-0044

Pezold, M. J., Imgrund, C. M., & Storkel, H. L. (2020). Using computer programs for language sample analysis. *Language, Speech, and Hearing Services in Schools*, *51*(1), 103–114. https://doi.org/10.1044/2019_LSHSS-18-0148

Prutting, C. A., & Kirchner, D. M. (1987). A clinical appraisal of the pragmatic aspects of language. *The Journal of Speech and Hearing Disorders*, *52*(2), 105–19. https://www.lamar.edu/fine-arts-communication/_files/documents/speech-hearing/prutting_checklist_article.pdf

Romski, M. A., Bornman, J., Sevcik, R. A., Tönsing, K., Barton-Hulsey, A., Morwane, R., Whitmore, A., & White, R. (2018). Language assessment for children with a range of neurodevelopmental disorders across four languages in South Africa. *American Journal of Speech-Language Pathology*, *27*(2), 602–615. https://doi.org/10.1044/2017_AJSLP-17-0035

Saenz, T., & Huer, M. (2003). Testing strategies involving least biased language assessment of bilingual children. *Communication Disorders Quarterly*, *24*(4), 184–193. https://doi.org/10.1177/15257401030240040401

Salkind, Neill J. (2010). *Encyclopedia of Research Design*. SAGE Publications.

https://doi.org/10.4324/9780203974681-28

Shipley, K. G., & McAfee, J. G. (2016). *Assessment in Speech-Language Pathology* (5th ed.). Cengage Learning.

South African Department of Basic Education. (2010). *The Status of the language of learning and teaching (LOLT) in South African public schools*. https://www.education.gov.za/Portals/0/Documents/Reports/Status of LOLT.pdf?ver=2011-03-30-231358-000

Southwood, F. (2005). A comparison of the responses to three comprehension and three production tasks assessing the morpho-syntactic abilities of Afrikaans-speaking preschoolers. *Per Linguam*, *21*(1), 36–59. https://doi.org/10.5785/21-1-71

Southwood, F. (2013). Towards a dialect-neutral assessment instrument for the language skills of Afrikaans-speaking children: The role of socioeconomic status. *Journal of Child Language*, *40*(2), 415–437. https://doi.org/10.1017/S0305000912000037

Southwood, F., & Russell, A. F. (2004). Comparison of conversation, freeplay, and story generation as methods of language sample elicitation. *Journal of Speech, Language, and Hearing Research*, *47*(2), 366–76. https://doi.org/10.1044/1092-4388(2004/030)

Southwood, F., & Van Dulm, O. (2015). The challenge of linguistic and cultural diversity: Does length of experience affect South African speech-language therapists' management of children with language impairment? *The South African Journal of Communication Disorders*, *62*(1), E1–E14. https://doi.org/10.4102/sajcd.v62i1.71

Squires, B., Bird, E. K. R., & Cahill, P. (2020). "Undating" and "quarter ponies": Comparing the use of derived words and compounds across discourse types and age groups. *Language, Speech, and Hearing Services in Schools*, *51*(3), 761–777. https://doi.org/10.1044/2020_LSHSS-19-00076

Statistics South Africa. (2012). *Census 2011: Census in brief*. http://www.statssa.gov.za/census/census_2011/census_products/Census_2011_Census_in_brief.pdf

Stoel-Gammon, C. (2011). Relationships between lexical and phonological development in young children. *Journal of Child Language*, *38*(1), 1–34.

https://doi.org/10.1017/S0305000910000425

Tilstra, J., & McMaster, K. (2007). Productivity, fluency, and grammaticality measures from narratives. *Communication Disorders Quarterly*, *29*(1), 43–53. https://doi.org/10.1177/1525740108314866

Timler, G. R. (2018). Using language sample analysis to assess pragmatic skills in school-age children and adolescents. *Perspectives of the ASHA Special Interest Groups*, *3*(1), 23-35. https://doi.org/10.1044/persp3.sig1.23

Tommerdahl, J., & Kilpatrick, C. D. (2014). The reliability of morphological analyses in language samples. *Language Testing*, *31*(1), 3–18. https://doi.org/10.1177/0265532213485570

van der Linde, J. (2015). *Developmental screening and communication delays in infants: A South African primary health care perspective*. [Doctoral Dissertation, University of Pretoria]. https://repository.up.ac.za/handle/2263/53474?show=full.

van der Merwe, M. N., Mosca, R., Swanepoel, D. W., Glascoe, F. P., & van der Linde, J. (2017). *Early detection of developmental delays in vulnerable children by community care workers using an mHealth tool*. [MA dissertation, University of Pretoria]. https://repository.up.ac.za/handle/2263/71437

Van Dulm, O., & Southwood, F. (2014). Child language assessment and intervention in multilingual and multicultural South Africa: Findings of a national survey. *Stellenbosch Papers in Linguistics*, *42*(0), 55. https://doi.org/10.5774/42-0-147

Verdon, S., McLeod, S., & Wong, S. (2015). Supporting culturally and linguistically diverse children with speech, language and communication needs: Overarching principles, individual approaches. *Journal of Communication Disorders*, *58*(2015), 74–90. https://doi.org/10.1016/j.jcomdis.2015.10.002

Westerveld, M. F., & Vidler, K. (2016). Spoken language samples of Australian children in conversation, narration and exposition. *International Journal of Speech-Language Pathology*, *18*(3), 288-298. https://doi.org/10.3109/17549507.2016.1159332

Wildsmith-Cromarty, R., & Balfour, R. J. (2019). Language learning and teaching in South African primary schools. *Language Teaching*, *52*(3), 296–317. https://doi.org/10.1017/S0261444819000181

World Medical Association. (2008). WMA Declaration of Helsinki – Ethical Principles for Medical Research Involving Human Subjects. https://www.wma.net/wp-

content/uploads/2018/07/DoH-Oct2008.pdf

6. APPENDICES

APPENDIX A: ETHICS APPROVAL

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Humanities
Fakulteit Geesteswetenskappe
Lefapha la Bomotho

Humanities 100
Since 1919

17 March 2021

Dear Miss P Liebenberg

Project Title:	Describing the spoken language skills of typically developing Afrikaans- speaking children using discourse analysis
Researcher:	Miss P Liebenberg
Supervisor(s):	Prof JJ Bornman Prof J Van der Linde Mrs IMS Schimper
Department:	Speech Language Path and Aud
Reference number:	17008698 (HUM001/1220) (Amendment)
Degree:	Masters

Thank you for the application to amend the existing protocol that was previously approved by the Committee.

The revised / additional documents were reviewed and **approved** on 17 March 2021 along these guidelines, further data collection may therefore commence (where necessary).

Please note that this approval is based on the assumption that the research will be carried out along the lines laid out in the amended proposal. Should your actual research depart significantly from the proposed research, it will be necessary to apply for a new research approval and ethical clearance.

We wish you success with the project.

Sincerely,

Prof Innocent Pikirayi
Deputy Dean: Postgraduate Studies and Research Ethics
Faculty of Humanities
UNIVERSITY OF PRETORIA
e-mail:PGHumanities@up.ac.za

Fakulteit Geesteswetenskappe
Lefapha la Bomotho

Research Ethics Committee Members: Prof I Pikirayi (Deputy Dean); Prof KL Harris; Mr A Bizos; Dr A-M de Beer; Dr A dos Santos; Ms KT Govinder; Andrew; Dr P Gutura; Dr E Johnson; Prof D Maree; Mr A Mohamed; Dr I Noomè; Dr C Puttergill; Prof D Reyburn; Prof M Soer; Prof E Taljard; Prof V Thebe; Ms B Tsehe; Ms D Mokalapa

APPENDIX B: COVID-19 SCREENING FORM

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Fakulteit Geesteswetenskappe
Lefapha la Bomotho

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Department of Speech-Language Pathology and Audiology

COVID-19 screening form

Dear Parent

In order to keep everyone as safe as possible, this document has to be completed prior to the session – on the day of data collection.

I, _____ (parent / guardian name and surname) of _____ (child's name) hereby confirm that I understand that COVID-19 is a virus that is highly infectious, and can spread from person to person, and survive on surfaces. I understand that as a parent / guardian, I have a responsibility to ensure that all rules set by the National Institute for Communicable Diseases (NICD - https://www.nicd.ac.za) and the National Department of Health, are followed. Accompanying persons must adhere to physical distancing rules at all times, with a fresh and clean cloth face mask on, at all times (https://www.nicd.ac.za/wp-content/uploads/2020/04/Guidelines-Use-of-cloth-face-masks.pdf).

I understand that the clinician strictly adhere to the COVID-19 safety and prevention guidelines as per the WHO and NICD. Therefor I will not hold her legally of financially responsible in the unfortunate case of my child contracting the virus or any other illness.

Complete this section

Question	YES	NO
Have you, a family member living in your home or your child travelled to a COVID-19 hotspot in SA in the past 14 days?		
Have you, any one in the immediate family or your child been in contact with anyone with confirmed COVID-19 in the past 14 days?		
Do you, an immediate family member or your child have chills?		
Do you, an immediate family member or your child have a cough?		
Do you, an immediate family member or your child have a sore throat?		
Do you, an immediate family member or your child have shortness of breath?		
Do you, an immediate family member or your child have body pains?		
Do you, an immediate family member or your child have diarrhoea?		
Do you, an immediate family member or your child have an increased body temperature?		

I confirm that the above mentioned information is accurate and true. I understand that not data collection will be done is the answer to one of the questions above is YES.

_____ _____

Parent / guardian signature Date

Room 3-14, Communication Pathology Building
University of Pretoria, Private Bag X20
Hatfield 0028, South Africa
Tel +27 (0)12 420 2355
Email isabella.schimper@up.ac.za | www.up.ac.za

APPENDIX C: CAREGIVER INFORMED CONSENT

UNIVERSITEIT VAN PRETORIA
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Department of Speech-Language Pathology and Audiology

OUER INLIGTINGSBRIEF EN TOESTEMMING (Afrikaans)

Beste Meneer/Mevrou

U KIND SE DEELNAME IN 'N NAVORSINGSTUDIE

Ons wil u en u kind graag uitnooi om aan 'n navorsingstudie oor hoe kinders taal aanleer, deel te neem. Hierdie navorsing word onderneem deur die Universiteit van Pretoria (Prof. Bornman, Prof van der Linde), in samewerking met die Dr Febe de Wet van Stellenbosch Universiteit. Die titel van hierdie studie is: 'Describing the spoken language skills of typically developing Afrikaans-speaking children using discourse analysis'.

Doel van die studie

Die lang termyn doel van hierdie studie is om 'n rekenaarprogram te ontwikkel, genoem die TALC ("Tool for Analysing Language and Communication") wat navorsers in staat sal stel om gesproke kindertaal te herken en dit dan outomaties om te skakel in geskrewe taal. Verder sal die sagteware ook in staat wees om die geskrewe teks te analiseer. Daarna moet die sagteware opgelei word om na soveel as moontlik voorbeelde van kinder-spraak te "luister" en om stadigaan te "leer" om woorde korrek te kan herken. Om hierdie leerproses in werking te kan stel, moet ons spraak voorbeelde van verskillende kinders versamel. Ons voorsien dat die uitkoms van hierdie projek 'n betekenisvolle impak op navorsing wat met taal aanleer te make het, kan hê.

Wat sal van u en u kind verwag word tydens die studie?

Indien u toestemming gee dat u kind aan die studie mag deelneem, sal die volgende verwag word:

- Om die studie met 'n navorsingsassistent te bespreek. Tydens hierdie gesprek sal ons u kind vra of hy/sy gewillig sal wees om deel te neem. U kind se keuse ten opsigte van deelname sal gerespekteer word.
- Indien u kind bereid sal wees om deel te neem, sal ons op 'n dag, tyd en plek ooreenkom waartydens u en u kind die navorsingsassistent kan ontmoet om die opnames te maak. Dit sal ongeveer 60 minute duur.
- 'n Getekende toestemmingsbrief moet vooraf verskaf word.

Room 3-14, Communication Pathology Building
University of Pretoria, Private Bag X20
Hatfield 0028, South Africa
Tel +27 (0)12 420 2355
Email isabella.schimper@up.ac.za | www.up.ac.za

Tydens die opname sal 'n klein mikrofoon aan u kind se hemp vasgemaak word deur middel van 'n magneet. Wanneer die studie begin (die opneem van die spraak monster), sal u gevra word om die vertrek te verlaat. Daar sal ook 'n video opname gemaak word van die gesprek tussen u kind en die terapeut.

U kind se opgeneemde spraak monster moet so 'n spontane kommunikasie situasie soos moontlik weerspieël. Daarom sal die navorsingsassistent met u kind gesels en sal hul saam na prente storieboeke kyk wat ryklik geïllustreer is asook sommige speelgoed waarmee u kind kan speel. Dit maak glad nie saak waaroor u kind en die navorsingsassistent tydens die opname praat nie en daar is geen regte of verkeerde antwoorde nie. Alle spraak gedurende hierdie tydperk sal opgeneem word.

U moet vir ongeveer 1-1,5 uur in totaal begroot vir die dag waartydens die opname gemaak gaan word.

Let wel: Indien u kind dalk 'n verkoue het vir die dag waarop die opname beplan word, vra ons dat u ons asseblief vroegtydig sal kontak. 'n Verkoue kan heel moontlik u kind se stemkwaliteit beïnvloed, en daarom mag dit dan beter wees om die opname uit te stel.

Na die opname sal alles wat met die mikrofoon en video opgeneem word, deur ons personeel getranskribeer word (m.a.w. neergeskryf word). Alle spraak wat persoonlike detail bevat, byvoorbeeld name van mense en plekke, sal nie getranskribeer word nie.

Watter regte het u en u kind?

Deelname is te alle tye vrywillig. U of u kind mag enige tyd besluit om te onttrek indien u/ hy /sy sou wou, sonder enige negatiewe gevolge. Alle persoonlike identifiseerbare inligting sal vertroulik gehou word, deur slegs van proefpersoon nommers gebruik te maak. U kind se klankopnames sal dus vertroulik wees.

Wat sal met my kind se data gebeur en wie sal daartoe toegang hê?

- Die navorsingsdata sal vir 'n tydperk van 15 jaar in beide harde kopie, asook elektroniese formaat, veilig by die Universiteit van Pretoria (in harde kopie en digitaal) gestoor word.
- Data sal ten alle tye as vertroulik hanteer word. U kind se identiteit en persoonlike inligting sal nie publiek bekend gemaak word nie. Alle identifiserende inligting sal onder 'n proefpersoonnommer gestoor word. Die inligting sal slegs aan navorsers beskikbaar gemaak word vir administratiewe doeleindes, en slegs proefpersoonnommers, sonder enige proefpersoon name sal gebruik word.
- Geen persoonlike inligting (name, ens.) sal in die transkripsie wat van die oudio-opnames gemaak word verskyn nie. Op die oudio-opnames sal ons ook persoonlike inligting uitvee of verberg deur van geraas of ander geluide (bv. bieps) gebruik te maak.

Room 3-14, Communication Pathology Building
University of Pretoria, Private Bag X20
Hatfield 0028, South Africa
Tel +27 (0)12 420 2355
Email isabella.schimper@up.ac.za | www.up.ac.za

- Die geredigeerde oudio-opnames en transkripsies sal aan die projek deelnemers (taalkenners en ingenieurs) beskikbaar gestel word, ten einde hul met die ontwikkeling van die sagteware by te staan.
- Die resultate van die studie sal ook vir opvoedkundige en navorsingsdoeleindes gebruik word (studente opleiding, kongresreferate, spesifieke wetenskaplike publikasies). Hierdie publikasies sal uitsluitlik op resultate fokus. Hierdie resultate sal nie aan spesifieke kinders gekoppel wees nie.
- 'n Opsomming van die resultate sal aan enige ouer bekend gemaak word indien hul sou belangstel.

Addisionele Opsie: Maak u kind se data beskikbaar vir ander navorsers (TALC databasis)

- Indien u toestem, sal u kind se identifiserende data ook in die TALC databasis opgeneem word om en vir toekomstige navorsing gebruik word. Die data kan of gestoor word as (geskrewe) teks of as oudio-opnames in die TALC databasis.
- Navorsers moet op 'n individuele basis aansoek doen vir elke projek om toegang tot die databasis te verkry omdat alle data met 'n wagwoord beskerm word.

Wat is die risiko's en voordele aangaande deelname in die studie?

- U kind sal op geen manier benadeel word of skade berokken word tydens hierdie studie nie. Deelname is ten alle tye vrywillig. Kinders of hul ouers/voogde mag kies om nie aan die studie deel te neem nie, en mag enige tyd onttrek sonder negatiewe nagevolge.
- Moontlike risiko's: Alle persoonlike inligting (insluitende name van mense of plekke), wat tydens die gesprekke opgeneem is, sal uit die transkripsie verwyder word en ook vanaf die oudio- en video-opname. In die data analise sal net 'n proefpersoonnommer, en nie u kind se naam gebruik word
- Voordele: Die resultate van die studie mag 'n bydrae lewer om meer effektiewe metodes te ontwikkel vir navorsing met betrekking tot taal aanleer en vir die vroeë opsporing van spraak probleme (wat dan aangespreek kan word) in die Suid-Afrikaanse konteks.

Ons sal dit hoog op prys stel indien u die aangehegde vorm sal invul om aan te dui of u gewillig is om u kind te laat deelneem. Vir enige verdere inligting, kontak ons gerus by die onderstaande kontakbesonderhede.

Vriendelike groete,

Room 3-14, Communication Pathology Building
University of Pretoria, Private Bag X20
Hatfield 0028, South Africa
Tel +27 (0)12 420 2355
Email isabella.schimper@up.ac.za | www.up.ac.za

Prof Juan Bornman

Prof Jeannie van der Linde

Mev Isabel Schimper

Room 3-14, Communication Pathology Building
University of Pretoria, Private Bag X20
Hatfield 0028, South Africa
Tel +27 (0)12 420 2355
Email isabella.schimper@up.ac.za | www.up.ac.za

Hiermee gee ek, _____ (ouer/voog naam en van), ouer/ voog van _____ (kind se naam en van), toestemming vir my kind om deel te neem aan die bogenoemde studie. Ek verstaan die doel van die studie, wat van my en my kind verwag sal word, wat met die data en inligting sal gebeur na afloop van data insameling, asook wie daartoe toegang sal hê. Ek verstaan en aanvaar alle risiko's en voordele gekoppel aan my kind se deelname in die studie. Ek bevestig dat ek die bogenoemde geskrewe inligting oor die studie ontvang en gelees het. Ek het genoeg tyd gehad om enige vrae aan die navorsers te vra en ek het geen besware teen my kind se deelname aan die studie nie. Ek is bewus daarvan dat al die inligting wat deur die studie ingesamel word, insluitend persoonlike inligting, anoniem met 'n proefpersoonnommer geprosesseer, analiseer en as die resultate van die studie voorgehou sal word. Ek verstaan dat ek of my kind mag kies om nie aan die studie deel te neem nie en enige tyd mag onttrek sonder negatiewe nagevolge. Ek bevestig hiermee dat ek vrywillig toestemming gee dat my kind aan die studie mag deelneem. Ek bevestig dat ek 'n getekende kopie van die toestemmingsbrief ontvang het.

Hiermee gee ek addisionele toestemming dat die data identifiseerbare data ook beskikbaar gestel kan word vir die TALC databasis en dat die data op hierdie databasis gestoor mag word.

Ja, ek gee toestemming vir die gebruik van my kind se data op die TALC databasis	Nee, ek gee nie toestemming vir die gebruik van my kind se data op die TALC databasis nie.

_____

Ouer/ voog naam en van in drukskrif

Ouer	Voog

Verwantskap aan kind

_____ _____

Ouer/ voog handtekening Datum

_____

Navorsingsassistent se naam en van in drukskrif

_____ _____

Navorsingsassistent handtekening Datum

APPENDIX D: PARTICIPANT ASSENT FORM

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Kind toestemmingsbrief (Afrikaans)

Hallo, my naam is Petria Liebenberg

Ek en die mense wat saam met my werk wil graag 'n program vir die rekenaar maak wat outomaties kan opskryf wat kinders sê. Die rekenaar moet leer hoe kinders praat. Ons wil die rekenaarprogram leer om na baie kinders wat praat te luister – kinders net soos jy. Hoe meer kinders die rekenaar het om na te luister, hoe vinniger sal die rekenaar leer. Ek wil weet of jy ons wil help om die rekenaar te laat leer.

As jy wil, gaan ons die volgende doen:

Ek gaan vir 'n rukkie met jou gesels en met 'n mikrofoon opneem wanneer ons gesels. Ons gaan in die kamer langs hierdie kamer gesels. Daar is 'n paar boeke met prente en speelgoed. Ons kan oor enige iets praat waaroor jy wil praat. Daar is nie iets wat reg of verkeerd is nie.

Ek gaan 'n klein mikrofoontjie (wys mikrofoon vir die kind) met 'n magneet op jou hemp vasmaak, sodat dit naby jou mond is om mooi te kan opneem.

Die mikrofoon gaan alles opneem wat jy vir my vertel. Ek gaan ook 'n video maak, sodat ons mooi kan hoor wat jy sê. Ons gaan nie wat ons opneem met iemand anders deel nie. Net ek en die mense wat saam met my werk gaan dit gebruik om die rekenaar te leer om te luister na hoe kinderstemme klink en werk.

As jy nie verder met my wil praat nie, of as jy nie meer die mikrofoon wil dra nie, kan jy enige tyd so sê. Ons sal dan teruggaan na jou mamma of pappa toe. Niemand sal vir jou kwaad wees nie.

Kind toestemmingsbrief (Afrikaans)

Naam van Kind: _____

	Het jy alles verstaan wat ek vir jou verduidelik het?
	Verstaan jy dat jy self kan besluit of jy wil deelneem?
	Verstaan jy ek alles wat jy sê met die mikrofoon gaan opneem?
	Verstaan jy dat jy enige tyd kan vra dat ek die opnemer moet stop?

	Het jy enige vrae wat jy my wil vra? 
	Is jy gelukkig met al die antwoorde wat ek jou gegee het? 
	Wil jy vandag saam met my werk? 

APPENDIX E: BIOGRAPHIC QUESTIONNAIRE

UNIVERSITEIT VAN PRETORIA
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Fakulteit Geesteswetenskappe
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Department of Speech-Language Pathology and Audiology

Ouer vraelys (Afrikaans)

Voltooi asseblief die volgende vraelys. Maak asseblief gebruik van die spasies en seleksie blokkies.

Idetifiserende inligting:

Kind se naam en van: _____

Geboortedatum: _____ (dag/maand/jaar)

Geslag: _____ (manlik / vroulik)

Persoon verantwoordelik vir voltooiing van hierdie vorm: _____

Verwantskap tot die kind: _____

Algemene inligting oor die kind en sy / haar ontwikkeling:

Hoeveel boeties of sussies (sibbe) het die kind: _____

Hoeveel ouer sibbe het die kind: _____

Hoeveel jonger sibbe het die kind: _____

Merk slegs relevante blokkies met 'n X:

Het u kind enige sensoriese of fisiese gestremdhede?

□ Visueel, spesifiseer: _____

□ Gehoor, spesifiseer: _____

□ Fisies, spesifiseer: _____

Het u kind enige spesiale leer behoeftes? □ JA □ NEE

Het u kind al voorheen spraakterapie ontvang? □ JA □ NEE

Indien JA, vaarvoor? _____

Room 3-14, Communication Pathology Building
University of Pretoria, Private Bag X20
Hatfield 0028, South Africa
Tel +27 (0)12 420 2355
Email isabella.schimper@up.ac.za | www.up.ac.za

Voel u dat u kind op ontwikkelingstoepaslike vlak funksioneer? ☐ JA ☐ NEE

Indien u kind 5 jaar of ouer is, het hy/sy al 'n skooljaar herhaal? ☐ JA ☐ NEE

Indien u kind reeds in 'n skool is, dui aan in watter graad: Graad _____

Waar spandeer u kind die meeste tyd:

Tussen 7:00 en 14:00 _____

Tussen 14:00 en 17:00 _____

Watter taal word die meeste gepraat by u kind se dagsorg / kleuterskool / skool?

_____

Inligting aangaande kind se daaglikse taalgebruik:

Is u kind se huistaal Afrikaans? ☐ JA ☐ NEE

(Huistaal verwys na die taal wat die kind verwerf

deur interaksie in die huis. Dit is gewoonlik die taal wat die kind

die beste ken voordat hy/sy skool toe gaan)

Praat u kind enige ander taal as Afrikaans? ☐ JA ☐ NEE

Indien Ja, watter ander taal /tale?

1) _____

2) _____

3) _____

Indien u 'n taal moet noem wat u kind die beste ken, watter taal sal dit wees?

_____

Room 3-14, Communication Pathology Building
University of Pretoria, Private Bag X20
Hatfield 0028, South Africa
Tel +27 (0)12 420 2355
Email isabella.schimper@up.ac.za | www.up.ac.za

Is daar enige ander tale wat deur die kinders en volwassenes gebruik word by die huis?

Lys asb die ander tale: 1) _____

2) _____

Watter een van die bogenoemde tale word die meeste in die huis gebruik?

_____

Bykomende inligting:

Geboortedatum van biologiese moeder: _____

Dui asb aan hoeveel volwassenes in u huis woon? ☐ 1 ☐ 2 ☐ 3

Hoogste vlak van kwalifikasie van ouers / volwassenes wat saam met u kind in die huis woon:

Ouer / volwassene 1: _____

Ouer / volwassene 2: _____

Ouer / volwassene 3: _____

Beroepe van ouers / volwassenes wat saam met u kind in die huis woon:

Ouer / volwassene 1: _____

Ouer / volwassene 2: _____

Hoeveel kinders (onder 18 jarige ouderdom) woon in u huis? _____

Hoeveel volwassenes in u huishouding werk huidiglik? _____

Room 3-14, Communication Pathology Building
University of Pretoria, Private Bag X20
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Email isabella.schimper@up.ac.za | www.up.ac.za

Werk die kind se ouer(s) voldag? ☐ JA ☐ NEE

Wat is die totale huishoudelike inkomste?

☐ Minder as R7 000 per maand ☐ Meer as R 7 000 per maand

Wil u graag die resultate van die studie elektronies ontvang? ☐ JA ☐ NEE

Indien JA: verskaf asseblief u epos adres: _____

Vraelys voltooi deur: _____ Datum: _____

Baie dankie dat u hierdie vraelys voltooi het!

Room 3-14, Communication Pathology Building
University of Pretoria, Private Bag X20
Hatfield 0028, South Africa
Tel +27 (0)12 420 2355
Email isabella.schimper@up.ac.za | www.up.ac.za

APPENDIX F: ALTERNATE METHOD OF MLU CALCULATION

Alternate MLU calculation method (Adapted from Oosthuizen & Southwood, 2009)

Exclude:

a) Self-repetitions.
b) Direct imitations.
c) Single-morpheme responses *ja* 'yes', *nee* 'no', and their equivalents (mmm; ah-ah), as an answer to a question, as an acknowledgement of the SLTs utterance, or during self-talk.
d) Incomplete or abandoned utterances that were not followed by a revision.

Include:

a) Spontaneous single-word utterances that do not reflect discourse bias, e.g., during spontaneous naming of objects or self-talk.
b) *Yes/no* responses immediately followed by an explanation.
c) Utterances where the child completes the adult's utterance
d) Social or formulaic utterances, such as *wat is dit?* 'what is this?', *nee dankie* 'no thanks', *kyk hier* 'look here', *so* 'like this'.

APPENDIX G: PRAGMATIC PROTOCOL SCORING SHEET

PRUTTING & KIRCHNER
PRAGMATIC PROTOCOL

(PRUTTING & KIRCHNER, 1987)

Participant number	
Date	
Researcher	
Communicative setting observed	

Communicative Acts	Appropriate	Inappropriate	Not observed	Examples & Comments
Verbal aspects				
A. Speech acts				
1. Speech act pair analysis				
2. Variety of speech acts				
B. Topics				
3. Selection				
4. Introduction				
5. Maintenance				
6. Change				
C. Turn Taking				
7. Initiation				
8. Response				
9. Repair/ Revision				
10. Pause time				
11. Interruption/overlap				
12. Feedback to speakers				
13. Adjacency				
14. Contingency				
15. Quantity/ conciseness				
D. Lexical selection/use across speech acts				
16. Specificity/ Accuracy				
17. Cohesion				
E. Stylistic variations				
18. The varying of communicative style				
Paralinguistic aspects				

F. Intelligibility and prosodics				
19. Intelligibility				
20. Vocal intensity				
21. Vocal quality				
22. Prosody				
23. Fluency				
Nonverbal aspects				
G. Kinesics and proxemics				
24. Physical Proximity				
25. Physical contacts				
26. Body posture				
27. Foot/ leg and hand/ arm movement				
28. Gestures				
29. Facial Expression				
30. Eye gaze				

SUPPLEMENTAL MATERIAL: TWO THIRTY MINUTE TRANSCRIBED SAMPLES FROM EACH AGE CATEGORY FOR EACH GENDER

Participant 3101

dit lyk so of sy omval my mamma lyk snaaks
my mamma het blou ogies
en die is haar neus
my honde
ons het nie hare nie
kom ons teken vir haar rooi hare
my mamma het rooi hare
#X
dis mamma se hare lank is
is hoe my mamma s'n lyk
moet ons vir haar teken
die ander een het die [{stick}] lyf
hiers die stekies en daars die stekie
maar ek moet eerste haar skoene teken
eers die hempie
en hier is die en hier is die rok
en hier is die skoene by die en daarso hakskoene
te vet
ek het 'n pienk lyfie
so
dis hoe my lyfie lyk
nee ek het nie my kop nie
daai is pappa se kop my pappa het sulke groot kop
hyt kort hyt lang hare
ja vir my pappa
[my]
ek sê mos [pyp] nee ek het geel ogies
so
my lyfie is ook rooi en hiers my nekkie
en hier is my lyfie
en hiers
oeps ek het haar vergeet

en hiers haar arms
nee ek het nie so maak jy arms
{looks} {like} ek het my ander hand vergeet
ek weet nie daars een
tone
tone
en hiers die ander tone
die uil
duif
ja en 'n uil maak so
dis hoe uil maak
teken vir my lang
my hare is tot op die vloer
nee raponsie het nie rooi hare nie syt silwer hare
ek vergeet
my klein mondjie met
lyk ek mooi
op
blou
hoekom het jy daai
nou waars my [pappa]
ja dis mos my mamma
my pappa het swart hare
swart mooi
hou jy van swart
dis jou pienke
my pappa se hare staan regop
my pappa lyk baie
glimlag pappa
pappa het sulke lang vingers
pappa se hand
ek staan voor hom want ek
want ek gee vir hom 'n druk
jy kan hom op 'n foto sit
ek foon ek het 'n speel
ek moet goui-gou gaan pieps

my toilet is daai kant
ek sien die foto ek
hoekom bel hulle altyd
[die] is #X
{perfect}
jy kan gee vir daai [boetie]
niks
ek gaan gou-gou die goed gaan kyk wat ons gaan doen het
hy sê ons sit bo in geleer
ek wil [leë] boks gaan haal
ek het net gekyk wats daarin
ek het
ek het so
[en toe]
ek teken 'n bos
ek weet nie
hyt nie wiele nie
ons het sy wiele vergeet
hierso
'n grote
daar
klein wieletjie
die nie
[hierso] daars hy
[dit is so lange]
net
skroefie
ek het vergeet wat
nog 'n skroefie
gaan hom so insit
ja hy is
wil weer sy wiele maak]
moet ons die skroefies ook bêre
hy doen nie wiele hier nie
hyt nie wiele nie
dis {fun}

[kyk nou kan hy nie ry nie]
jy weet wiele is mos so
wats nog in jou tas
ek weet waar hy is
hierdie een
wats die
[tok] 'n tassie
[tokke]
waar is sy [wiel]
sy ding
die blaser se ding
[o dis toe]
dis dorp
eerste hom bad
hoe lyk 'n bad
bad
hoe lyk 'n bad
hoe lyk jou huis
[my] huis het ook
[kyk ons {live} nie meer in daai kamer nie ek slaap nou by my mamma en pappa se kamer want]
want ek
wat was die
hoe lyk sy [kos]
hmm waars sy bak
nou moet ons net sy
ek wil nie vir jou vertel nie
haarkapper het my hare gesny maar
toe groei dit toe kom dit weer lank
nie lekker nie
daar was 'n skêr
hy is alweer [honger]
nou moet ons hare was
ja wat [hier] wat is die ene
hys nog honger
nee hondjie jy moenie so wees nie

ons eet daar
so ons het paste of noodles of
[iets anders]
ek het iets lekkers
kan ons aan die sny of iets
nee dis 'n tamatie
[kasteel ook]
iets [anders]
ek het hier [geslaap]
'n boom
[ja is]
hulle lyk ook so
[ek hou van suurlemoene]
sê
'n
wat daar nog
mielies
ons maak is met
[is twee] van sy
wats daai
ek weet nie
wats daai
ja die melk kook is soos
[wat is dit hierdie]
dis reg
ek kos met die lepel
soek jy nog
soek jy druiwe
mag nie druiwe op jou eie
{oepse} {daisy}

Participant 3003

goed
#XX
fietsies

fietsies
ry maag
oranje
ek weet nie
kop
maar ek weet nie hoe n kop te teken nie
dis sy klere
n skoen
skoene
n sirkel met ogies
n sirkel
n neus
hare
en dan ore
ons luister
arms
hierdie
dit is sy hande
mondjie
karretjie {fixer}
sy wiel is afgebreek
waar hoe lyk sy wiele
so groot
op die kar se wiel
ek {fix} die kar
ja ek het so baie {tools}
en dan {fix} ek die kar die kar se
die een
n skroef
[hy {fix} die karre]
ja hierdie
ek hou van daai
ek weet nie
ek het ook sulke skroewedraai maar ek het nie sulke goeters nie
ek wil die ding uithaal
dit is n hy sit karre op

gaan jy hierdie kan ons hierdie ding aansit vir hom
n [see] ook
en #XX
ja maar ek het nie nog maatjies wat [my maatjies is nie]
hierdie
ek wil nou met daai ook speel
dan doen ons ietsie anderste ek weet nie
ja en ons speel lekker op die mat ek kan ook dit uit al skroef
hyt daar bo [{getrip} so]
dat ek gou gaan vassskroef
lekker goed net op die blokkies op die mat speel en dan gaan ons buitentoe nee ons dan as ons klaar daai dan
lekker speel ons het groot klimraam
ons speel lekker en ek kan afgeval en #X doen af speel
en ons het ook n klimraam
ja maar daar speel daar van ook
[en] n {slide} maar hys so lekker
dis so vinnig
en dit kan bollemakisies maak
hierdies
ek gaan daai ook doen
dit is dis waar ons lekker mee gaan speel
ek weet jy ry met die karre dit
en dan ry jy ook met die ander kar met dit
ek het al ek sien dit lyk so
{hello} ja {open}
dis n huisie
vir die klein meisie
{hello} dis die vlak
dis {magic} ah wat is dit oeh
ja ek het een al gesien
by n ander plek
en toe speel ek op hom
toe ons piekniek gaan hou het
dit was so lekker en my ouma was daar
lekker kos bring

hierdie en hierdie hulle gaan dit braai
en hiers n klein huisie
hulle staan lekker by klein huisie hierdie is waar hulle gaan piepie
ja dis agter wat jy kan lekker goeters kry
hierdie is di edrukgoed waar jy af gaan {slide}
[dan's]
ek ons het net piekniek gehou net piekniek wag hoekom is daar oorfone
dit was so lekker ons het net een ding gehad
net nie lekker kos nie
nee nie lekker nie
ek hou nie ek hou van rys en van visvingers en van rys en van pampoen en van visvingers en van pampoen
van ietsie anders
ek weet nie
waar gaan hoe kan die perdjie gaan waar gaan hulle nou
kan dit maklik oopmaak
hy wil ook binne in
is ek weet nie
padda
hy sit daar want hy wil saam met die perdjie ry
hulle moet ook inkom
ek kan ook hier om hierdie oopmaak
ah daar val uit
hulle gaan na hulle an- {hey} {wait} {for} {me}
{bye} hy gaan vir een van die ander mense gaan dra net ene
hy gaan anet hierdie een saam
nee hulle gaan na {no} {wait} hy dit moet ook saam gaan
ja [by my] skool [ah]
ja rerig
ja want hy het by my skool want hy wees by my skool
ek weet nie
baie kere
n wat is dit
kan wat is daai groot ding
die perdjie gaan nou terug ry
al di emaatjies wat lekker speel

ek weet nie
hys besig om kos te maak
nee want mamma en pappa sê nee
ek skep dit net in
hy speel lekker karre
hy speel hy wil vir vissies kyk
hy bad lekker en hy speel lekker in die bad en hy bad
[ah daar val almal]
in die aande
in die oggend
hy was die kar
nee ons het na n karwas oom toe gegaan nee ek het nooit nie
baie lekker n een wat so geraas maak
n groot tuinslang
water
ons speel lekker by die see
ja saam met my ouma [en] my oupa
ons het ek weet ons het in die see in {gejump}
en dan speel ons lekker en ietsie gaan my byt
ietsie anders
nee ek het hulle weg ek het ietsie gedoen met my voet ek het byt eers my voet en dan kan ek hom self beter maak
hy was die {ice-cream} ding
sy kry {ice-cream} by die oom
lekker
voor as dit son
[oh ja] en ons het roomys
ja in ons kas en {cones}
ek het een al geproe wanneer gaan ons daai speel
hulle gaan hy gaan met sy {ice-cream} daarnatoe en dan gaan hulle op die boot
op n klein boot en daars nog n boot
nee hys groot
dis hy lekker partytjie
ja want iemand verjaar
by #XX en by #X sin en by #XX sinne en ek net hulle twee se partytjie
julle kry lekker koek en {cupcakes} en lekker koekies en balonne maar daai een se ballon

{gepop} en dan gaan jy persente kry en lekker speel

Participant 4001:

maar mag ons ons ore natmaak voor
as ons swem dan maak 'n mense hulle ore nat
[so mag] ons dit doen
[o maar]
maar my sussie gaan nou swem
wat is hierdie goed
is dit speelgoed
is daai speel-speel
ek kan nie
ek sou probeer
dis wat my juffrou sê
[en 'n skerpmaker]
[ek gaan hom] bietjie skerper maak
nou waar gaan ons hom insit
iets
op die tafel dink ek
nou watse kant
dit lyk of hy onderstebo is
maar dan gaan dit nie uitkom nie
dis gou so bietjie breek
[perfek]
ek gaan
is watse [kleur] is die
maar kyk ek gaan net op die
dis vleeskleur
[dit is in]
my lyf is vleeskleur
hiers my boetie
vee
ons speel partykeer
[piet fraai] maar speel-speel iets
my boetie
[my boetie is]

ek weet nie
ek het [dis]
is hier [swart ja hier is]
en my ma het ook haar hempsak
ek gaan
ek kan nie so mooi
hemde teken nie
enige iets
enige iets ook
maar ek gaan nog my boetie se sy broek teken
ek gaan sy
hier ek teken myself
ek het swart hemp
en nou gaan ek [sommer]
[sy broek is ook swart
[ek kan nie nou voete teken nie
[ons] kan op die anderkant teken
hoekom [tel] hierdie ding
gaan dit breek
hoekom is dit hierso
ek gaan [nou]
ek gaan nou 'n ander papier moet kry
is hierdie
as
is daar speelgoed daarin
myself hoog
gaan myself hier teken
kan ek 'n nog 'n nuwe papier kry
hys nie so mooi soos 'n sirkel nie
wat
ek hou baie van my
self
my sussie het gebegeer as 'n swart tannie
ek weet nie
ek het
lekker kos geëet toe ek

maar
ons eet nie kos
by die ons pap by die skool nie ons
doen dit nie meer nie maar my boetie doen
ek kry baie pap in die oggend dat ek nie honger is nie
ek raak 'n die hele tyd honger
nou en juffrou
wat ons
goud
'n happie van ons kos gaan eet
mielies wortels
nee nie ja daar was 'n mielie
en 'n wortel en wortels en
twee komkommers en
en twee brood
{jam}
ek weet nie
hmm ons het 'n bietjie gespeel
myself
skool
maar
ek sal hom so in my skool
ek wil nie
hê ek wil my skool ek moet maar ek wil nie my skool teken nie
my oë is bruin en groen
hierdie bruin
of laat ek kyk nee dit
ek gaan haar neusie onder teken nee in die middel
nou pupil
ek weet nie
'n ander ogie
jou [mond]
ek weet nie
nee eks gelukkig
ons kort hare
nou jou ore

hierdie is goud
nou hoekom is dit so ver
ek het dit het gedog hierdie is
dit was die ding hierdie ding
gaan net myself teken
kan ek vir jou ietsie sê
ek staan agter my maatjies in die ry
eks die klasleier
hulle lei die maatjies
[toe het 'n gat]
nee die juffrou kies
en daai speelgoed
haal ons al die speelgoed uit
[wat is daar binne]
[dink daar gaan twee]
jy kan dit by jou huis op die muur gaan plak
maar jy moet die res in jou asblik gooi
hoe maak 'n mens dit oop
en ek het die ander [ry]
wat is in dit
in die
wat is wat kan hierdie een doen
oud [lewe 'n hoed]
watse ding is die
water
dis die [ketel]
pan
sy beentjie
hy moet eerste suiker insit
ons kan nie hiers nie suiker in
een
bak
met suiker
ons maak hier 'n
maak toe
sit dit op die stoof

en dan wag jy
terwyl jy wag kan jy
jy kan vir jouself
dan mag jy
wat is hier binne
dan maak jy dit vas aanmekaar in
ek kan dit ook [doen]
kan die kies
ek weet [ ] nie
mielie
kan jy die ander ene ook uithaal
die ene
ek moet ook my hand hier insit
hoe maak 'n mens hierdie goed oop hulle monde
ja maar hoe maak 'n mens dit oop
maar dis 'n bietjie hoe maak 'n mens dit groot oop
laat ek dit net hier insit
ek
ek wil nie hom aanhê nie
dis te warm
wat is hierdie
hiers {mushroom}
sit
hierdie
is ons wortels wit
ek gaan hom bêre
ek gaan nou 'n mielie maak
mielies maak
jy het 'n mielie
dan moet jy hom net warm maak dan {pop} hierdie goed oop
ek kan nie die ding
kyk
'n ui
wat is die
so die regmaak en in die oond
jy gaan nou sien

dis klaar
en ons het 'n gemaak
ons het
eerste daai ander stuk van die wortel
ek gaan nou vir my
wat is hierdie
waars die stuk wat daar moet kom
is dit 'n dieselfde een
hierdie een is net kleiner
ek kan hier vir my 'n tamatie maak
ek gaan nie
wats die
ek wil nie nie
wat
is hierdie ook mielie
daai [blou] ding nie
die mielie
ek gaan vir my ook 'n mielie maak
ek gaan nie twee mielies
[ek] kan dit vir jou
net gou ietsie sê
ons gaan
nou wat gaan ons doen
ek hyt geval
ek gaan hom eerste
gee is
ons het nie meer 'n mielie nie
ons het net
ons het nie {another} niks meer nie
soek jy enige iets
[tan]
maar jy kan nie 'n {mushroom} kry nie
ek gaan nie [gee] nie
dit is {broccoli}
[hou jy van tama
hou jy van 'n

[ek hou nie regtig erig daarvan nie maar hou ek daarvan
wat is die
[ek] weet nie
ia 'n [pampoen groen]
[ek gaan net gou sê]
hou jy van 'n boontjie
maar hou [jy van 'n]
[hou jy van]
[wat is hier binne]
wat is dit
[ek weet nie]
[ek gaan] [een sit]
[nou waar gaan die tandarts kom]
hiers [nog tamatie]
wat is die
ek [weet nie]
[een] inspuiting
[jy] gaan eendag ene moet kry
want [as]
ek gaan eerste nee
ek [gaan nie hierdie uittrek]
hoekom is hier 'n mes
daar was nie [tand trek nie]
[en wat ek hierdie ding nodig maak]
hys nie
ja
nou wat is
jy doen nie 'n tandarts nie die
maar hierdie een het nie
sy tand gebreek nie
[hyt sy daars ietsie fout in sy oë]
dit lyk soos 'n geweer
dit kyk in jou oor

Participant 4104:

vierkant en n driehoek en n tema

speelgoed
speel
maak n gesig n lyn mannetjie
rooi
n roomys rokkie
pienk en groen
en wit soos jou hemp
ons kook kos
[rys]
met sous
bruin sous
pap
mieliepap {oats} pap
matabela pap
met hierdie
dan moet ons dit roer
n apie
[is] dit n lepel
piesangs
ons het ook sulke speelgoed by ons huis
[van n piesang]
[waars die piesang]
n waatlemoen
lekker soet
kan hy so of so
dit is n ertjie
hiers n mielie vir jou
ons maak sop
met rys
wil jy
ons speel dokter-dokter
dan maak dan roer ons dit
kan hy [aankom]
as iemand as n {minion} mens se tand wasse
ook
want dan moet ons tandarts toe

n hammer
n skoen afsny
en ons kan mens se hart luister met hierdie
[inspuiting]
[twee]
een vir my boetie een vir my
[dis n] hondjie
#XX en #XX
hulle byt ons trampoline stukkend
ek weet nie
want hulle is stout maar rox doen dit nie meer nie
kyk
dis n stort
hiers n kam
nee groot
rebekka mamma of pappa
kom die sker [daar]
kom ons sit die sker daar
kom ons laat die hondjie stort
want as hy bosluise het
dit byt hondjies se hare
ja kyk hier drie hondjies
hulle is snaaks neh
want hulle is n hondjie
is daar niks daar
[alles]
kom ons maak die hondjie droog
met n haardroeer
ons maak mense droog hare
dan gaan hy in die parkie
[het jy]
waars die beertjies wat hier inkom
is daar nog ietsie waarmee ons kan speel n dogtertjie en n seuntjie kry
[en n ma]
[{seesaw}]
n motorfiets

[ek gaan net hier swaai
twee perdjies
ek hou van twee perdjies
hiers n feetjie
en n mamma wat n baba dra het n mamma n baba
hulle bring [n rond]
vrugte
sal jy hulle uithaal dat hulle op die rondomtalie
[n katjie]
het jy die hondjie gebere
is dit n hondjie wat [daar moes kom]
n perdjie
hiers nog n perdjie wat [binne nag]
hulle wil nou deur die venster loer een twee perdjies twee perdjies kan nie
dis n brandweerwa wat die water spuit
want hys n brandweerwa
die hondjie dog wat doen die perdjies
hulle wil hy blaf vir die
die perdjies
daars n muis
daar
drie goeters
honde kan nie
hy kan ook nie
terug
hy wil dit ry
hulle gaan parkie toe met al die kinders
ek wil dalk moet die dogtertjies op die rondomtalie
is daar nog n perdjie drie
hy sleep
n koets
hierdie wit in die het jy die dinge wat die water dood spuit
moet hy so [hy gesit]
ons kan so sit
hulle gaan die kom hy daar binne
n padda

n katjie
n rokkie
n blommetjie
kan hy nie toe nie
kom ons sê iemand moet nog binne
n katjie
kan n hondjie dalk pas
[kom ons sit]
hy gaan in die bos
hys uit die bos
hy het hulle [die kom hulle vat nou die] padda in die water
[oepsie]
dit is dit
dit is n skroef
hoe maak hy hoe kan hy
waar bo hier
daar bo
ek kan nie
moet hy so ry
hy kan nie ry nie
ons moet die wiele opsit
met hierdie
n [skroef]
want hyt nie nof wiele nie
ons het skroewe neh
nou kan hy ry
hyt nie n dak nie
was hy so
[ons ry]
ons ry met ons kar as ons wil skool toe ry
dis die sneeu
ja wat aan n boot is

Participant 5102:

ek gaan nou hallo
[ek kan nie so maklik my pappa en my boetie teken nie]

dis makliker om net vir my te teken

ek

gunsteling te teken

ons teken n bietjie ons werk n bietjie

ons teken bietjie en ons teken mooi goed maar partykeer het ons net prentjies wit prentjies maar met goeters op maar ons het dit nie geteken nie die juffrou het dit geteken en

dan moet ons dit so inkleur

party maatjies het ja

die anders het net so lang hare maar nie met krulhare nie

baie goed maar die {corona} is nou hierso so net die rooi maatjies mag in sulke hok speel maar daar gaan sulke lang toue wees sulke hokkie wat ons kan speel maar ons ruil die hokkies die hele tyd om as maar ons bly vyf slapies net nog twee slapies dan gaan ek weer na die skool #XXXX toe na my skool toe maar ons speel lekker buite dis n speelgrond wat ons lekker kan speel

nee ons moet ons maskers nog ophou

dit voel n klein bietjie lekker maar party maatjies kan ons nie so maklik hoor nie

ja dan klink dit sag

ons speel n bietjie speelgoed maar daars sulke speelgoed maar met wat vas aan mekaar is en dis baie groot en

dis lekker vir my ook om te speel maar dis die lekkerste om te teken

ja maar my boetjie hou net van {tv} [kyk]

hy kyk sulke {terrible} goed dis amper soos gemors en my pappa hou nie eers van dit nie

nee ek teken net

[nee maar] ek het partykeer moet ek kyk partykeer moet boetie fliek hier [net partykeer]

ons ky-

sulke {terrible} goed van monsters en sulke mense wat en een mens is n seuntjie en hy maak dis n dogtertjie en hy smeer vir hom {lipstick} aan

nope boetie stem net

[en hy] ek mag nie sê nie hys baie lelik met my partykeer en hy sê ek mag nooit {minecraft} speel of ek mag nooit die {remote} vashou nie

{minecraft} is n {game} maar daar ons kry n {trex} wereld van {jurassic world} en dis {minecraft} maar dit is net sulke blokkies wat boetie altyd speel boetjie hou ook van {minecraft}

ja ons kan

ons kan daar binne bly

soos {minecraft} en as dit donker is dan kan ons vir ons daar bedde sit en ons kan daarop slaap

daars party vlermuise maar dis sulke blokkie vlermuise

en die mense se koppe is vierkante net vierkante

ons koppe is nie vierkante nie

ons kan

[nie van wat ek onthou nie]

ons gaan slaap met mense maar party {t-rexxe} ons kan ook {t-rex} se eiers kry daarso op {minecraft} maar party {t-rexxe} word nie so vinnig groot soos n pappa nie party {t-rexxe} bly net babas

[ek is] vyf jaar oud en my boetjie is agt jaar oud

ek word amper ses

ja eks graad r by rooiklassie

volgende jaar ja maar ons moes vandag eintlik opedag gehad het ons moet na #XXXX toe gegaan het maar dis nou oor die {corona} want ons kan nie nou gaan nie want die {corona} virus laat na ons na die plekke na goed gaan wat

ja want as ek wil as #XX daar is en ek wil baie naby aan hom staan en met hom speel dan gaan seker die baas van #XXXX sê ons mag nie weer daar kom nie want ons het nie n masker op nie maar ons moet maskers aanhe

die maskers maar die #XXXX maatjies vat hulle eie maskers na die skool toe wat hierso by die huis is maar my boetie vat altyd net {batman} my boetie maar my pappa dis eintlik my pappa se maskers maar hys nou te groot so daai maskers pas nie meer vir hom nie so dis nou my boetie sin

ek kan al mooi teken ek kan nog nie al my pappa teken nie maar my boetie kan en ek kan nog nie n mamma teken nie maar ek kan net ek en my boetie teken

ek gaan net myself

ek gaan bietjie grassies bysit en n sonnetjie en

die gras is

ek speel binne en buite

ek speel

wat ek binne speel is ek bou bietjie legkaarte ek speel met my poppies en ek teken n bietjie

ons soek eers daai kante wat so is wat

wat plat is en dan en dan gaan ons wat nog plat is en dan gaan ons nog plat en dan bou ons die middelste stukkies wat een twee drie vier vier stukkies het

ek gaan nou die hare doen

oe ek vergeet die ore

my gunsteling kos pastaslaai

dit is komkommer dit is tamaties ons kan ook druiwe bysit dit is daai pasta en dit

en dis kaas

ek het al twee keer

wat ons moet alles doen ons moet die komkommer sny ons moet die kasies sny ons moet die druiwe sny en dan gooi ons die pasta in en dan gooi ons {mayonaise} op

saam met dit ons eet met dit ons kan ook mamma ek weenie

[ek kan nie onthou nie]

my pappa braai dit partykeer ja en ons eet {marshmallows} ons sit dit so op n stokkie en dan sit ons dit in daai braai en dan word dit bietjie swart dan eet ons dit maar dis baie {sticky} en taai

amper net amper

ja n rooi {aliceband}

ek gaan nou die res

my hare is baie lank

haarstyl my gunsteling haarstyl is

n vlegsel en dit is n

dit is n stertponie

amper ek wil net nog bietjie grassies teken

dan moet ek n sonnetjie [teken]

ai ons het nog nie dit gese nie wat ek van hou om buite te speel is om mamma pappa te speel sussie boeties te speel ons speel daarso op daai huisie ons speel daai dak daai kamer is boetie sin en hierdie een is myne maar ons het n glyplank gehad maar nou is die glyplank weg want ons het vir ons hasie ons het n hasie n baie sag hasie so grys met bietjie wit en ons het vir hom daar buite n hok gebou want as ons daar nog n glyplank het dan gaan en as die hasies wil bietjie buite kyk dan kan hulle nie so maklik die so buite kyk nie so dis hoekom ons die glyplank weggevat het

my boetie {squish} partykeer die hasie

nee hy mamma {squish} boetie die hasie partykeer

hy druk dit so hard

ja ons het baie stoute honde

hulle ek het n baie mooi wit hasie gehad maar nou is my wit hasie dood

want ons honde se name is #XX en #XX #XX is n dogtertjie en baxter is n seuntjie en #XX is n wit hond soos my baba hasie en #XX is bietjie witterig en bruinerig

hulle breek die hok

en hulle maak ons hasies dood maar hy het nie my hasie dood gemaak maar my hasie se neus het gebloei

ja maar my mamma het gese boetie mag dit nie vir my sê nie maar toe sê boetie dit vir my hy het net nie onthou hy mag dit nie vir my sê nie

ja baie maatjies het soos lourens is by #XXXX ook hy is by die liggeel en eks in die rooi klas en ja maar liggeel is ook graad r soos ons sin maar liggeel is nie rooi nie

#XXX ken #XX maar #XXX is nie in #XXXX nie sys in #XXXX graad een bytjie klas

ek en #XXX speel ja maar as ek by #XXX speel en #XX weet dit nie dan kom kyk hy dan gaan hy baie kwaad vir my wees dan's hy nooit weer my nefie nie

#XX [bly]

#XX bly bietjie ver

mamma bly #XX bietjie ver van ons

hy sal hierso kom kuier ja ek het al by #XX hulle oor kom slaap

ja maar my boetie het ook al maar ek het maar boetie het al eerst hyt my boetie het heel eerste alleen nou toe het ek tweede alleen

ja maar ek en #XX het baie lekker gespeel

ja maar #XX was nie ja maar #XX se boetie se naam is #XX en #XX was nie so bly want hy wil vir #X speel maar hyt gedog boetie gaan ook kom maar hy gaan nie

ja maar ek en my boetie het ook partykeer ook saam gegaan well dit was heel eerste tyd toe ons saam met mekaar gegaan het

[ek sien die meeste van bytjieklas]

ja en ek gaan vissieklas toe want my boetie is nou graad twee vissieklas

ja maar my boetie se maatjie wat #XX is is in {cupcake} klas graad twee {cupcake} klas

maar #XX hou nie daarvan seker om by die {cupcake} klas te wees nie want my boetie hou nie eers van [cupcakes] of koek nie maar hy hou net van {t-rex} koeke

ek hou van n {my} {little} {pony} koek n {unicorn} {wonderwoman} ek gaan n {wonderwoman} partytjie kry

as ek ses word gaan ek {wonderwoman} en as ek sewe raak gaan ek {unicorn}

[en as ek] agt raak gaan ek n reenboog

[en as ek nege] raak gaan ek {my} {little} {pony}

ons kan bietjie dans

soos liedjies

ons kan {cupcakes} koek eet ons kan koeldrank drink maar my pappa sê ons moet eers n slukkie ons moet n hele glas vol water drink dan kan ons {coke} n bietjie kry en as dit

partytjie is kan ons ook n bietjie inkleur

springkastele werk baie maklik ons {jump} op springkastele ons kan in die water gaan ons kan gly op die springkastele ons gly en dan val ons so in die water ons het al n water springkasteel maar toe dit my vierde partytjie was het ek n {mickey} muis partytjie {minnie} muis partytjie gehad en toe het imiel hulle en hendre hulle was bietjie stout klein bietjie

hulle het my springkasteel amper gebreek

hulle het dit getrek hulle het my dit amper met n speek ag n steek ding amper gebars maar toe dink hulle dis nie reg nie want ons gaan vassit daar binne maar maar toe ek kan nie eers regtig onthou nie seker was dit nie maar

dit was nogsteeds lekker by die partytjie

ek gaan ek is amper klaar

ek sal seker later my son teken

ek sal

en ek sal nounou op my gras klaar teken oeh

ja ons het dit al by #XXXX

ja maar ek het nooit met dit gespeel nie

ek was nie eers in ligpers nie want net ligpers het hierdie speel en die ligblou maar ek was nie in daai klasse nie ek was heel eerste in hond klas en toe was in baba klas toe was ek in maroen klas toe was ek in seker donker groen of liggroen klas en nee donker donker groen klas toe was ek en nee wag ek was nie in daai klas ek was maroen toe was toe was ek in donker pers to was ek in turqoise toe was ek in rooi klas

ons het by die see kom kuier n bietjie

ons het so lekker by die see gewees ons het n klein bietjie geswem in die see daar was ons het party haaie gesien

ja maar ek was drie jaar oud toe ons by die see was

ja toe wil ek vir my oom gaan roep het my oom is oom pieter my tannie is tannie zellie maar weet jy van my tannie

my tannie was daar by

kleutergenot sy het al in maroen die prisma klas die prisma klas is oranje

ja maar my tannie is my dans tannie so sy leer my akrobaat

ek weenie ek

[hyt op sy ruggie geval]

ek gaan kyk of ek gaan dit naby aan sit ah amper

[amper] dit het so

[hou net hyt so ah]

ek gaan hierdie een probeer

ek het twee rooi paddas
okay ek gaan nie hom vashou nie
[yay ek het een in]
[oeh amper]
ag nee man ek gaan nie hom vashou nie
nee wag ek gaan hom harder
[hys skeef hy moes na die] {puddle} ek gaan eers daarso sit kom ons
ek het ene in hy swem
[jyt nog een]
wat doen ons daar is ons doen wag ek wil gou iets vir jou wys
die mat want dit gaan bietjie seerr wees as ek op die vloer
bietjie ek gaan my kop so seermaak
[ons doen] dit n bruggie ons doen n tafel wag kyk gou hier ek kan
en ek kan voorentoe ook loop
ons oefen ja ons doen {pushups} ook

Participant 5005:

ons doen ook dit
ons ek weet nie
ons speel oggend buite ons speel middag buite en ons speel mamma tyd [buite]
ja wanneer ons mammas ons kom haal
vir my
ek kan baie goed bal skop
wanneer my pa werk speel ek met my boetie en dan wanneet my pa wanneer dit sondag is rusdag dan en my pa werk nie dan kan ons lekker speel
partykeer kom ek en my ma en dan kom my te vroeg so dan kan ons een minuut so bietjie sokker speel
ek skop hierdie
ek het ook my boetie se bal
ek het
die oranje een is benna sin
hierdie is myne
ons speel eintlik speel ons nie so sokker nie ons probeer net die bal tussen my pa staan tussen daai bome dan moet ons dit probeer langs hom skop dan probeer ons dit so [deurskop]
nee verby pappa nie verby die bome nie

ja tussen die bome in die middel
ons maak bietjie alytyd bietjie
ons maak altyd so bietjie
ons maak elke liewe vrydag {spagetti} en dan elke liewe sondag dan speel so wanneer dit etenstyd is sondag dan eet ons
frikadelle en {spagetti}
sulke maalvleis bolletjies
ja ons braai partykeer
ek kan al self die vuur aansteek
my pa laat die vuurhoutjie aansteel
dan laat ek hard
die vuur aansteek
boetjie
ek is vyf en ben is drie
ja hys nog in graad dubbel r
daars sulke groen muur en die anderkant is die groot skool en die een kant is die klein skool benji is aan die een kan
vir benji
ek pappa benji
ek dink net nog my hond by
want hys maar al teveel in die prentjie
die hondjie se naam is basjan so
hys n {schnauzertjie}
wanner ons eet dan pla bassie my so dan moet ons hom sluit ons moet hom buitentoe vat en dan sluit ons hom eers bietjie daar tot ons klaar is dan maak ons weer dit oop
en hy steel partykeer ons kos
hy wil ons kos steel maar hy
hy eet hy spring nie op nie hy kry net kossies meestal hy steel net kossies meestal maar dan eet hy net die kossies wat op die grond val
hiers sy krulstertjie
ma t t ias
hierso
[wat is]
[speelgoed] weet jy wanneer ons in n speelgoedwinkel instap
nee wanneer ons verby n speelgoed winkel stap dan sê ek net vir my ma kan ons een karretjie gaan koop want ek hou baie van hierdie speelgoeters

ek sien n seekoei n tier klip krokodil

n wildekat n nessie n arend nessie

beer zebra tier leeu

ons gaan altyd na sulke restaurant maar ons eet partykeer in daai restaurant en dan langs die restaurant is daar n dierewinkel en dit is amper soos n {transform} {spur} dit is amper soos n {transform} museum want die dier is dood

en hulle oe is oop en dan hulle het nou n nuwe beeld voor die deur gesit

van n leeu wat n bok vang wat sulke krul

ja sulke krulhorings

hierdie is nie n gemsbok nie n hys baie groter as n gemsbok

n olifant

n olifant het ons al aangeval

die olifant wou ons kar plat trap

ja sulke dis ons dis ons oom die oom het doodgegaan

want dit was al n ou oom

dis nie sulke wildsplaas nie dis dit lyk vir my soos n dieretuin maar dit is eintlik n bos dis soos n bos waar jy in kamp

[maar] daars net sulke groot kamp plek en die huise is die huise se mure is van baksteen gemaak die dak is van die dak is van strooi gemaak en die droe gras en dan

en dan is daar daars n duikplank en n swembad so maar daars waterskerpioene

hulle kan in die water gaan en hulle kan vlieg

ja hulle kan [vlieg]

kameelperd

ek weet dat n kameel[erd jou seer kan slat met hierdie horinkies

en hy kan jou skop

en jy pla hom

donkie perd

ek weet nie

nee my niggie ry perd

n mens klim op die perd en dan laat jy

ek het al n {cowboy} gesien my pa se

my pa se pa se pa

my pa toe my pa n kind was daai pappa toe daai pappa klein was

en daai pappa se pappa hy was n {cowboy}

hulle sê

hulle ry vinnig op hulle perde

ja en partykeer slat hulle die perde op hulle boude dat hulle vinnig miskien hardloop

vlermuis

by ons kampplek woon daar n vlermuis [in die dak]

maar sy nes is net bo op die dak

hyt nie n gat gemaak in nie hyt grassies gevat hyt grassies gepluk toe sit hy dit bo-op die grasdak

hyt nie die dak se grassies gevat nie

n wildebees

n wildebees is baie wild en n wildebees ons het al n wildebees aangeval

die wildebees wou

wou my seergemaak het

my pa was naby so my pa he hom net weggejaag

n {gorilla}

hulle het party n {gorilla} het eenkeer in ons huis ingebreek om die kos te steel

eenkeer ingebreek

hyt die draad gebreek van die dieretuin toe spring hy oor die dieretuin toe loop hy deur daai gat wat hy gemaak het en toe kruip hy so deur die gat

[ek ken al die diere hierso is almal]

dis rerig erig n visarend se babas

sommer visarende party visarende maak hulle neste aan droe bome wat uit die rotse uit groei dan maak hulle sulke neste in daai bome

in mikke sterk mik

n mik dis kyk hierso staan die boom dan is daar n tak en dan groei daar ook n ander [my ouma is hierso]

my en dan groei daar sulke takke langs mekaar dis n mikkie

ja in die mik van die

dat die mik die dinge kan vashou

wats daai

[ah ek ken dit]

ja dis baie lekker om te [speel]

my die ouma wat nounet daar geloer het is baie baie lief vir my baie liewer as die ander ouma vir my

die ander ouma is ook baie lief vir my maar sys nou bietjie meer by niggie want my niggies se ma is by die hospitaal want hulle moet die baba uithaal maar sy kan maar hulle moet nie die maag oop sny nie

en dan moet die baba uit

saam met die ouma wat geloer die lekkerste met my met haar is ons lees baie boeke met my ouma dis baie lekker vir my

ja mens druk hulle so

[ek] doen dit ek doen oefeninge

ons is by sulke oefen plek dan is daar sulke klomp ek is in die blou groepie so dis sulke daars sulke klomp groepies so dan die padda is ook blou en die paddas waar ek mee moet in daai

wat in daai padda moet spring is ook blou maar die

die ek weet nie

[vyf] ses sewe agt negie tien elf twaalf dertien veertien vyftien sestien

ons doen niks sporte nie ek het niks oefening ek het partykeer oefeninge op n veld ons moet oor die pad stap die veld is langs dis n baie groot grasperk as hierdie grasperkie

die oefen tannie sê wat ons moet doen

[ons] spring sakke en ons

ja baie lekker

[ek gaan] hulle altwee gelyk op mekaar skuins

en ek het ook

en ek het ook n bietjie en die en ons doen daai ding wat is sy naam dan moet ons so

[ja pushups]

maar die heel eerste oefeninge is dat ons moet hardloop

tien keer

ja want ons moet van die drom af tot by die muur hardloop

dis n hele uur ook dis sulke n reghoek veld en ons moet die langste plek kyk hiersos die reghoek

so kyk ons moet so hardloop

ek dink hierdie twee is nie so goed nie

hierdie padda wil nie in [hierdie padda] wil nie nou bad nie

nou het die padda gekry

hyt aan die

[hyt] aan die wal geraak

miskien bietjie hoër as hierdie spring

hierdie een gaan die hardste een ooit wees

en as hierdie padda nie

ek baie ver

hier spring hom hier terug

ons het ook

ons is bietjie stout partykeer ons ek weet nie nog stories nie ek ken nog nie stories nou nie

ons juffie sê ons kan nie praat terwyl ons eet nie ons moet stil wees as ons eet

ja pouse eet ons

biltong

en lekker [my hand is baie droog]

hyt drie krakies

ons

sjokolade smeer broodjies en neutebotter

en bietjie bovril en n nana ek mag nie {peanut} {butter} eet nie

eks allergies vir daai een

ek mag boomneute eet maar nie grondneute nie

[net nog] twee oor

dan's die speletjie klaar

miskien dink hy die dammetjie is agter hom

dom padda

hyt nou

ek dink hy spring

hy was n baba

ons ma is n bietjie en ons is n bietjie stout want elke keer as ons winkel gaan dan gaan koop ons ook n bietjie n speeltjie

n speelgoedjie

soos {hotwheels} of n karretjie of n speel-speel vegvliegtuig wat ook van yster gemaak is soos n regte egte vliegtuig

ek het {hotwheels} vir kersfees gekry van my tannie en my oom af

dis nou al oud maar dis lekker om met dit te speel want daars duisende karretjies wat blink

twee speletjies [klaar]

hulle wil nie bons nie

Participant 6103:

oral

buite

[ek het]
ek weet nie
[hier hierdie ene]
hallo
hallo
maar dis nie dieselfde kleur nie
perses is ook nie
een is bietjie ligter en een is bietjie donkerder
'n tier
ek weet nie
[ek dink ek weet nie]
olifante
ek
hou hierdie oupa-hulle wat nou by my kuier
hulle het hulle was saam met hulle het ons eenkeer wildtuin toe gevat
en toe
het 'n olifant gekom toe staan my oupa net stil maar dit het gelyk of [hy] olifant op my oupa-hulle se bussie gaan trap
ja maar daai olifant was verskriklik groot groter as ene wat ek gesien het
toe sê my ouma my oupa moet ry
ons het
net rooibokke gesien verder
leeus en luiperds
en tiere
'n lieweheersbesie
hulle is
hulle lyf is swart
en dan het hulle vlerkies wat oranje is
en dan
het hulle
[gil]
hulle het vlerkies wat rooi is
en dan het hulle kolletjies op hulle rooi vlerkies swart kolletjies
luiperd en 'n jagluiperd
[ja] ons het dit by my oupa se plaas gesien
ek weet nie

[net] dis 'n mooi sak.
nee ek hou van dolfyne
ja ek sit net die kryte
[sodat hulle reg is]
eks klaar
nee die boksie het net onder oopgegaan
dis alles seediere

toe het ons
toe gaan stap ons saam met my ma-hulle
toe
het my ma
gesien daar lê 'n haaieier
toe tel ons hom op
ja en toe ons by
mosambiek was
daar waar daar [pansies] is
toe
het [my niggie-hulle saamgegaan]
en
hulle
my niggie-hulle
en dis 'n hmm dis net twee sussies
en hulle
toe vra ek vir die klein sussie om my te help om pansies te soek
maar [toe kry sy ene met] nog 'n diertjie in toe sê ek sy moet daai een uitlos
ons
sal altyd 'n ekstra swembad daar hê om ook nog te swem
dis alles seediere [vissies]
seekatte
haaie
en
dis nemo
[daars nog twee]
ek het vergeet want ek het dit baie lank terug gekyk
ek hou van frozen twee

en ek hou van
ek weet nie nog nie
ek het net een boetie en nog 'n sussie
my
boetie
ons speel in 'n boomhuis wat ons besig is om nog te maak
ons het baie lank terug daarnatoe gegaan
ek weet nie
ons sou paasnaweek daarnatoe gegaan het
maar my ma het gesê dit is te ver
my juffrou sê as ons werk mag ons altyd ons maskers afhaal
en as ons eet mag ons ook ons maskers afhaal
ons mag nie pouses ons mag nie een of ander 'n ander tyd ons maskers afhaal nie
die haai
hierdie vissies
sterte
'n skilpad
maar my pa toe ons by die
ons noem dit die bosveld maar dis eintlik die hele plek saam sabie sun
toe my pa gaan uitry het
toe ry hy amper 'n klein baba skilpadjie dood
maar toe sien ek hom toe sê ek vir my pa hy kan nie verder ry nie
ja maar dit was so klein enetjie
ja hy was amper so klein
[soos hierdie een]
ek weet die lyk soos 'n pyl
[hoekom het die deksel af]
[het jy hom so gekoop]
[wel die 'n baie snaakse seekat]
[ek weet nie]
[wel my boetie het gesê]
[ek het al by iemand gehoor by 'n seekat] poef by dieselfde plek en hy eet by dieselfde plek]
[dolfyne]
hy eet vissies
['n seeperdjie]

[o hiers nog 'n seester]
maar ek het al gesien
hierdie ene
my oupa het sulke [plaas]
daars net hoenders
al die hoenders was eintlik my niggie-hulle s'n gewees
toe vat my oupa-hulle
want hulle was nie daar nie
en toe sit hy dit op 'n plaas
maar daai hoenders skree nou so vir die hulle skree ons in die oggende wakker eendjies
dis alles wat ek daar gesien het
ja dis alles wat daar
is
perde beeste
en daar kom
honde om die skape te jaag
ek weet nie waar gaan ek hierdie een sit
daai koei daar sit
[ek] skuif net gou eers hierdie
en skapie is hier
[by die trekker kom daar]
vang vis
wel ek het die mamma op 'n klip gesit
hulle kan nie op 'n klip
varkies wat aan hulle mamma drink
voëlverskrikker
om die voëls weg te hou
hulle eet
die eet die
groente
'n hasie
nee ek het nog nie een gehad nie my ma is allergies vir hulle
'n donkie
[wats hierdie]
[wats hierdie]

sy gooi dit in die bak
en die hasie gaan dit kom eet
ja ek wil net al die diere
in een kant
daai is nie 'n dier nie
hiers nog
daai goed
nee maar wats daai wolgoed in die pak
goed
ons speel {touchers}
die een maatjie hardloop
en die ander een moet hom {touch}
dan's hy aan

ek het dit nie gekoop nie want mammas koop dit vir [ons]
hmm lekkergoed
{chippies}
[pizza]
en daars [broodjies] en
wats daai
'n poppie
sambreel
o as dit reën dan
dit [hê] dat ons nie nat word nie
[ek het nie] geweet hierdie sambreel kan opslaan nie
want
as die son skyn
dan
kan ons lekker buite speel maar as dit reën dan kan ons nie
ons sal in die boom klim
of weer {touchers} speel

Participant 6006:

wel wat was die nee een
so hy was nee ja
net mamma pappa boetie sussie

ek het nie 'n boetie nie ek bedoel die boetie is ek

eks nie baie goed met hierdie nie is hier iewers 'n vleeskleur

dit lyk meer vir my wel ek sal maar met swart teken ek teken baie keer met swart

hierdie eerste een gaan pappa wees

ek kan nie baie mooi teken as dit so hobbelrig is nie

hierdie mat is hobbelrig

en ek teken meer op 'n gladderige een

bietjie hobbelrig wel skryf mooi

[ja bietjie beter]

'n bietjie saam met hom gaan visvang wel ek het nog nooit wel hy het al my gehelp

mens hou die as mens {fly} {fishing} doen ek weet nie wel ek weet hoe om gewone visvang te doen mens gooi net in met 'n aas maar mens moet reg die aas aansit styf anders die eerste keer toe mamma vir my aas aangesit het toe gaan hy weg

want mamma het nie hom styf genoeg vasgemaak nie

in die dam in

in die onderste dam

nie in daai koi vis dam nie

want daai visse is baie gewoond aan hoeke en as ons met hulle vang dan gaan hulle nie meer gewoond wees aan hoeke nie

nie die {fly} {fishing} dam nie net die onderste dam die onderste dam kan mens {fly} {fishing} doen met 'n sekere aas en daars reëls

die reëls is daars twee reëls mag nie gewone visvang in die {fly} {fishing} dam nie

en die ander reël is jy moet met 'n hond stap met 'n leiband hy kan nie los wees nie

want dis die {estate} se reëls

dan gaan hy weg hardloop en met iemand blaf

en vir 'n ander kind as hy nie van kinders hou nie dan byt hy die kind

net een en my niggie het ook een

ons s'n se naam is #XX

sy piepie baie in die huis

kleintjie

sys nog nie eers 'n jaar oud nie

waar #XX dis #XX se hond is al een jaar oud

sy blaf vir ander mense oor nie muur

ons speel bietjie ietsie

party speletjies van ons werk vinnig

dan kry en nie vir #XX nie want #XX is vinnger as ek sys my niggie

en dan eindig dit op hartseer partykeer baklei ek en #XX

as ons nie saam stem oor iets nie dan kry ons 'n baklei

mamma

mamma slaap altyd in

sy slaap altyd by my

dit raak baie lekker want dis lekker warm en party aand as ek koud kry en die {aircon} is aan dan klim ek {snuggle} ek in mamma se dingetjie in se nessie

dis nou mamma nou gaan ek my teken moet ek my teken

wel ek gaan amper 'n okay hierdie is my sussie

ja partykeer

partkeer kyk #XX hoe vang ek vis

#XX partykeer kry partykeer byt sy my soos toe ek klein was toe ek klein was toe byt sy my

net hier

ek weet nie

ja baie {movie}

ek kyk gewoonlik the grinch of bee movie

madagascar

ek hou baie van madagascar {three]

op die storie is 'n hulle {lost} in 'n {forest} toe gaan hulle toe vlieg hulle met die pikkewyne {zoo} pikkewyne se yster vliegtuig na hulle huis toe wel hulle kon nie dit reggekry het nie want hulle het perongeluk toe {city} toe gevlieg en toe gaan hulle te ver en toe breek hulle vliegtuig en toe

en toe gaan al die apies weg

om 'n bietjie te gaan stap ek het baie daarvan gehou om te gaan stap toe ek klein was en ek hou baie daarvan om legos te bou saam met my pappa

soos daai robot

ek het hom gekry vir my mooi rapport

okay laaste een ek

as mila gewoonlik tyd as #XX hiernatoe kom dan gaan vang ek 'n bietjie vis met haar

dan kyk sy of ek 'n vis kry dan hou sy meer daarvan om klein vissies of skoenlappers te vang dan raak sy {bored}

nie die hele dag nie

op naweke bly ek by die huis en partykeer gaan ek na my ouma toe of oupa

ek speel 'n bietjie met #XX en doen {tricks}

soos voor bo-oor 'n bommelakiesie doen

ek weet nie hoe kry ek dit reg nie wel ek het net geleer

nee ek is nie naskool nie

as skool uitkom dan speel ek bietjie wel partykeer voel ek 'n bietjie hartseer want ek kry nie 'n maatjie nie of #XX nie

en partykeer is my sussie {impressed} laat sy dink sys {cool} wel lyk lyk sy nie so nie sy dink so

as ek as ek weet nie partykeer as die enigste tyd wat ek kan onthou wat sy gedink het sys {cool} is toe die badwater ingetap het

en toe dink sy sys {cool} inelkgeval elke aand speel ons 'n voëltjie {game} en dan die eerste een wat met sy kar by die {finish} kom wen

ek teken baie keer prentjies

oh storieboek allerande goedtertjies

nie baie nie wel ek hou baie daarvan om werkies te doen maar party werkies is vir my lekker en party werkies maak my moeg

party werkies

soos moeilike groot werkies

elke liewe aand moet ek die bad water in tap wel die elke aand nie wel ek het lanklaas orca se bollies op getel

ja soos die huis werk en die skool werk is waarvan ek praat

en gewoonlik moet ek werk om geld te kry

bad water in tap en bollies optel wel ek weet nie regtig of ek die bollies optel nie

een keer moes ek gaan meet het hoe lank is die dinge en ek het almal reggekry wel ek het nie baie mooi ingekleur daai tyd nie

want ek is nie baie goed in inkleur nie

inelkgeval hierdies is die kaartjies wat ek gekry het vir my verjaarsdag

hierdie was van my ouma en die was van my ander ouma

of my mamma

die maatjies het my juffrou het vir my bietjie 'n hoed gegee daai goud hoed op my rak

inelkgeval gewoonlik

bou ek gewoonlik saam met my pappa lego

en ek het ek en my juffrou het vir die maatjies in my klas {sweeties} uitgedeel van my mamma af en dit was per ongeluk te veel want een van my maatjies in my klas se naam #XX was nie daar nie toe het sy per ongeluk te veel ingepak

ek het die ekstra een gehou by die skool vir #XX as sy eendag kom

gaan ons plus

een is twee

een plus een is twee dis maklik

my gunsteling kossies is {pizza} en {strawberries} en 'n bietjie roomys

partykeer bak ons dit by die huis en partykeetr maak ons dit self by 'n restaurant

ek eet {strawberries} as ek lus is

nee altyd

partykeer briefies

en vandag het sy vir my 'n briefie ingepak

en dit het 'n sonnetjie opgehad en ek het my {strawberries} opgeëet maar nie my broodjie nie

ek was 'n bietjie versadig

in my broodjie was ham en kaas

ek dink dit het vir my geproe soos twee hamme en een kaas

twee twee plus twee is vier

hoekom spring hierdie paddas nie so lekker nie

veral hierdie een

hy spring te ver

twee plus twee is vier

okay partykeer met my mamma hou so bietjie dag af veral as ek spoelerige magies het en ongelukkies in my broek

vakansie oh dit was na die wildtuin to egaan

partykeer toe ons by wolwespuit was wag toe ons by 'n plek was toe sien ons 'n skilpadjie

ek het al skilpaaie gesien en ek het 'n slangboek wat skilpaaie in het

[en {lizzards}]

ek weet nie of ons niks gesien het nie

die olifant was 'n nuwe een wel ek weet nie of ons die voëltjies gesien het nie

wel die enigste voëltjie wat ons gesien het by die wildtuin was die draad stert swael

gestap rond in die bosse wel ons kon nie tot onder gekom het nie want ek weet daar was 'n krokodil want daar was water en ek weet daar onder was 'n krokodil

baie hulle is groter as 'n mens

as hulle partykeer net daars twee maniere hoe 'n krokodil jou kan doodmaak die eerste manier is hy stoot jou af tot by die bodem en hy hou jou daar tot jy nie meer kan asem haal nie dan gaan jy dood dan eet hy jou op en die tweede ding is hy kan jou byt

ek het twee paddas okay

twee plus twee plus twee dink ek is ses

hy was in wel toe probeer hy uitspring

skelm

so dis ses

partykeer speel ons {touchers} soos vandag toe ek my kop gestamp het

mens hardloop vinnig as jy aan is

en as die ander maatjie aan is dan hardloop jy weg van die ander maatjie af en die ander ding wat ek kan sê van {touchers} af is mens moet baie vinnig wees en baie sterk mens moet baie energie in mens se bene hê

en mens moet as mens aan is dan moet mens probeer die ander maatjie {touch} en as jy hom ge{touch} het dan is die ander maatjie aan dan moet hy probeer jou {touch}

partykeer speel ons {sly} {fox}

{sly} {fox} is ek gaan nou vir jou wys so jy staan daar

so jy moet nou vinnig beweeg nie te vinnig nie ek gaan net hierdie is net 'n toets so jy moet vinnig beweeg so en as ek jou sien dan moet jy terug gaan as ek jou sien beweeg dan moet jy terug gaan so dis hoe dit werk jy kan terug gaan sit dis hoe dit werk

soveel soos as hulle wil en die ander ding is as jy nie hom as die outjie hom nie gesien het voor jy die maatjie gesien het dan hy moet hom probeer {touch} soos dan moet hy hom {touch} hy moet hom probeer {touch} en as ek hom sien dan gaan terug en dan die een wat die naaste is moet my dan {touch} dan is die maatjie aan wat my ge{touch} het is aan\

verstaan jy

lastige een pienke

okay die bak is te vol

ek dink hoe hierdie werk is mens moet elke keer as mens gevat het of gevang het in die bak moet mens uithaal en hulle bo-op mekaar sit

lastige een lastige een ek [gaan hom terug vat]

sien jy my goeie plan ek vat hom terug as hy te ver spring hierdie een spring te laag en te naby

te ver

dit was die laaste twee paddas in

swart [op jou bord]

wat is dit

dis seker net 'n bietjie van die hout se jy weet mos hout lyk swart binne

dis tipe hout

lyk soos yster binne

ek dink daai is 'n yster bord met hout bo-oor

ah wat is dit

haaie en goedters wat op aarde doen dit

wat op aarde gaan dit doen
wat wat moet ek nou doen
hierdie is 'n {fluffy} walvis lyk nie baie soos 'n walvis nie
hierdie lyk vir my soos 'n {death} een maar hy kan beweeg {check} hier
sy stert kan niks anders kan gebeur nie oh wag sy voete beweeg
hiers koraal
dit is koraal
ko mens noem dit koraal en die koraal party visse eet dit
dis goedters visse kan in dit wegkruip
en hierdie lyk baie vir my soos 'n vis aas
meer soos 'n koi vis
is 'n koi vis
okay dis 'n tipe ding
hey hierdie kan mens soos
beweeg
ek weet nie
ek dink so
wel nie sulke krap nie hierdie is gewoonlik 'n sand krap
ek het al {red} {crab} gesien
dit is 'n {lobster}
nog 'n {lobster}
nee daar is niks {red} {crabs} hier binne nie
hiers 'n duikman oh hiers 'n seekat amper soos in 'n storie
dis amper soos in {my} {octopus} {teacher}
weet jy wat is {my} {octopus} {teacher}
dis 'n storie van 'n seekat hy lyk presies soos dit
en sy seun het doodgegaan die outjie wat praat sy seun het doodgegaan in die see
nou gaan kyk die seun se pappa 'n bietjie rond want hy is nou die nuwe see duiker oh hierdie lyk vir my baie soos 'n {sting} {ray}
of dis meer 'n {manta} {ray} hier is nog 'n sand krap
wel moet ons nou hier 'n storie opmaak
okay dit kan dalk die man se okay ek wil net vinnig 'n draatjie gou gaan loop
okay wag net vir ek wil net dink hoeveel minute hoe lank is dertig minute
okay ek sal twintig minute maak ek sal kyk hoe vinnig sal ek wees
wil jy bietjie stilte hê hier binne
dink jy kan 'n bietjie met dit speel dat dit jou aandag kan aftrek van my af

Participant 7004:

enige iets
dit sal reg wees
ek het al baie
nog nie vol prentjies nie
hmm daai is nie mooi nie
[en dit hoe ver ek geteken het
dis diere
dit is {3D}
watse prentjie
{N}{O}
ek hou van om hasies te teken
nee ek mag nie
want mamma is allergies vir hulle
die uil het hulle almal opgeet
en hy het vier gehad
vier gehad
nee hy bly ver weg
te spring
en wortels te eet
ek hou van spek en pasta
nee ek hou van die skulpies pasta saam met my saam met kaas sous en argurkies
wats daai
[wat van die een]
moet ek almal gooi
hamburger
jy vat 'n broodjie sit blaarslaai kaas en dan 'n [pattie] op
jy sit twee broodjies
ons braai dit
dis wat dit lekker maak
ons braai bai ekeer tjops ribbetjies wors en [steak] dis die meeste wat ons braai
ons braai nou
hoe seer ek gekry het
toe ek vyf was
'n hond het my gebyt in my gesig
ons leer nou van deel maal en afrikaans en engels

baie
want dits van graad een af was dit vir my die lekkerste ding om te doen in die klas
want dis baie maklik om te doen
watse vragie is dit
Handre Pollard
rugby
ek dink hy speel slot
jy {tackle} die ouens
as hulle jou {tackle} dan kan jy dalk jou arm breek
amper
'n bank het op my arm geval
want dit was nie die volle bank wat op geval het nie
en dit was net die helfte van my arm so ek het hom net ek het hom net verstuit
'n boswagter
hulle pas bedreigde spesies op
dis wat die wilddiewe dood maak vir hulle horings
altwee daar is twee spesies wat die meeste bedreig word by ons
dis wildehonde en renosters
want hulle maak hulle dood vir hulle tande want hulle maak medisyne uit dit
ons speel so speletjie van diere wat jy allerhande goedters van dit leer so dan ken ek soos al daai goedjies
rugby\
hmm en skaak
die ene
ekt nie geweet hiers katjies nie
en hiers my sussie
vyt en geel
'n pappa 'n boetie 'n sussie en 'n baba katjie
hoekom winkel toe
dis boring
[o]
hulle het safari outdoor toe gegaan
maar dis letterlik soos 'n jag jag winkel
hulle verkoop gewere messe {daisies} en al daar goed
boeke
dis oor diere

so die pappa en die boetie en die sussie het saam {safari} {outdoors} toe gegaan toe sien die boetie en sussie 'n geweer toe vra hulle vir die pappa of hulle hom kan kry toe sê hy ja want hulle wou gaan jag het maar die baba het ook saam gekom en toe toe bring hulle die geweer huis toe en toe was die katjie so opgewonde om hulle te sien

vier en oranje

hmm waars die oranjes

hiers 'n oranje

so hulle wou nou 'n speelgrond gebou het en toe gaan koop die pappa baie hout om dit te bou en toe het almal saam gewerk om die klimraam te bou

hy het soos daai daar gelyk wat ons gebou het

daars 'n sandput heel onder dan is daar vier pale en dan is daar 'n dakkie bo 'n vloer en 'n net om mee op te klim en bande en 'n glyplank

een keer

twee bloues

die boetie en die katjie

eendag was daar 'n katjie sy pa het die katjie vir die boetie gekoop en nou kan die boetie met sy katjie speel wanneer hy wil en nog die katjie hou baie van hom en die pappa het gou gery om iets te gaan haal

hulle speel met so balletjie dis amper nou soos 'n balletjie maar dan is daar net rondte sagte veertjies om

want katte hou mos van om voëltjies te vang so die balletjie lyk soos 'n voëltjie dan gooi ek vir hom dan gaan haal die katjie hom

daar is baie planete en my gunsteling planeet in die {space} is saturnus want die kringe is vir my baie mooi om hom

dis hoekom dit my gunsteling planeet is

hy is die planeet naaste aan die son so hy is die warmste planeet

eks nie seker watter een nie

mars is eintlik 'n baie mooi kleur vir my

waar kom hy in

dit is 'n karretjie wat hulle gebruik op die maan

dat daar nie soos slegte goedters op die maan is nie

hy kyk of daar slegte goedters op die maan is

hier is jupiter

want hys die grootste planeet

mars ek ken nie 'n storie van mars nie

ek het nog nie eintlik baie van {space} gehoor nie maar dis vir my baie {cool}

met 'n ruimteskip

daar val elke keer as hulle hoër dan val daar elke keer 'n stuk af

want daars die {engine} daars vier verskillende {engines} so elke keer hulle gooi genoeg petrol of diesel in en dan as klaar raak en dan val die stuk net af

ek weet nie

so dis die plek waar die ouens reg kom om te gaan maan toe of ander planete toe

ek weet nie

nee hierdie is die satelliet

hys die ding wat vir ons krag gee

wats hierdie ding

want dis die enigste ouens wat ruimte toe gegaan het amerikaanse ouens

eerste op die maan en eerste in die ruimte

pluto

hys die koudste planeet wat 'n mens kan kry

hys heel agter

dis die dis hoe die maan lyk

hyt knoppe

en niks suurstof

hulle het so sakke hier agter op hulle rug en dis vol suurstof

nee dis soos jy weet as jy gaan {dive} dis ook amper soos dit maar die is net soos dis net soos 'n baie sterker gemaakte een en hy kan langer hou

want hiers so pypie wat loop en dan kom dit daar by die kop uit dan kry hy genoeg asem

hierdie ding

[{propellor}]

hmm eks nie seker nie

eks nie seker nie

wats hierdie

ek weet nie

ons het soos ons het nou eks nie seker waarheen dit is nie maar mosambiek toe gevlieg

ons het daar gaan ons het daar dit was die vakansie ons het kersfees kersfees daartoe gegaan

ons het gespeel op die strand gedans op die strand en nog ons het nog in die see gaan swem en in die {jacuzzi} geswem

jy vat 'n swembroek en 'n handdoek

[al wat jy vat]
nee ek sit nooit sonblok aan nie
ja my niggie hulle se velletjie is spierwit
hulle smeer baie sonblok
dit voel of jy gaan begin hoofpyn kry
want jy is lank in die lug en dit begin jou naar maak as jy heeltyd uit kyk
ons het so vir 5 ure gevlieg
maar om te ry vat dit 'n hele dag en nag
daar naby die eks nie seker waar was ons nie
waar kom dit op
eks nie seker nie
kom ek probeer dit so opsit
waars die mannetjie wat by hierdie ding pas
hy ry ook op die maan
want hierdie ene is wat jy mee kan rondry op die maan
die ander een is wat jy toets op die maan
[hy voel soos 'n ander tipe mat]

Participant 7105:

ek en my maatjie
#XX
by my eerste skool
#XX
ons speel en ons is in graad een so ons eet baie keer pouses
Broodjies en vruggies
nee ons eet kos sommer van mamma of mamma pak vir ons n kosblik maar party maatjies vergeet om kos in te pak dan kry juffrou vir hulle n broodjie by die snoepie
sweeties
net op vrydae
ons speel
ons hou daarvan om wawiele te doen dis vir ons lekker
ja ek doen n tipe dans dis nie gimnastiek nie maar amper
ons leer ons {splits} want ek kan ook {split}
en om my wawiele te doen
by die dans
nee dis ander maatjies

maar my maatjie is in n ander {level} as ek en sy doen ook {islands} die plek se naam is {islands}

sys in {level} twee eks {level} een

volgende jaar

nee sys ook n graad een

skool se naam is #XX laerskool

en daar is vyf klasse in elke graad

en daars baie maatjies in party klasse is daar agt-en-twintig party klasse is daar nege-en-twintig party is daar dertig

tennis netbal ek gaan hokkie doen die winter

ek weet nie

ons werk baie

huiswerk

om lyne te trek en te leer hoe om reg te skryf

ja ek het my naam in graad dubbel r al geleer

[ek dink dis drie] twee jaar terug

somer want dis lekker dan's dit nie so koud nie

ons trek baie keer skoolskoene en truie aan

uhuh maar ek doen partykeer

want dit was koud in die oggende

by die skool doen ons huiswerk en die naweek partykeer gaan ons na ouma toe partykeer gaan ons na ons plaas toe

ons speel daar

ons speel meeste buite

dan hardloop ons in die tuin

dis nie baie groot huis nie

ons kan maar hys nie so groot nie

ons kyk na bokkies en partykeer swem ons in die dam

en daars baie paddavissies

ek weet nie

maar partykeer kom ons naby

vakansies ons gaan see toe my ouma trek kaap toe so ons gaan kaap toe

as ek nege is

ons het op n groot {ferris wheel} gegaan

en ons het

amper

ons het
ek kan nie meer onthou nie dit was nogals lank terug
ek was al by {sun city}
ons gaan baie keer {slides} ry en ek het al hmm ek kan nie onthou wats die {slide} se naam nie maar dis baie {scary}
dis daar by {sun city}
jip baie ooh dit wat nogals lank om die trappe te klim
ek dink ons ek weet nie
ja baie dan tel ons skulpies op ek het al baie skulpe by die huis
ons kan in die see swem ek het dit al baie gedoen en ek het al golwe gery
uhm as die golf naby jou is dan moet jy begin swem
handoeke hoedens partykeer ek kan nie onthou wat nog nie
dat die son ons nie brand nie
om met haar te speel en vir haar goeters te sê en
ons speel en swem
{barbie} poppe en partykeer kyk ons televisie
{barbie}
ek weet nie ek het al {treasure barbie} gekyk {mermaid barbie} prinses {barbie} feetjie {barbie}
[ja] ek het party by my ouma party by my huis
dit is oulik
my mamma en my pappa
want hulle gee vir my kos en ek hou van hulle
ek hou daarvan om saam met pappa te swem want pappa was baie goed in swem
en met mamma hou ek daarvan om ek het iets soos {sylvanian family} dis baie oulik
[mamma hou] daarvan om dit te speel
moet ek almal al die kleure doen
yay
oepsie
tennis
mamma was baie goed in tennis
jou maatjies gooi vir jou die bal en dan moet jy hom slaan
soos lyne waar mens moet staan om regte plek te staan
ons speel
ek hoop nie pappa [maak n geraas]
die [agt-en-twintigste]

[agt-en-twintigste januarie]
ons hou partytjie hallo pappa
ons swem en ons eet koek
en ons speel met die balonne
blou groen
ek gaan nie my gunsteling kleur doen nie ek doen die reenboog volgorde agteruit
die boeke wat n mens luister jy kyk nie prentjies nie
dis n storie van n dogtertjie wat so baie {adventure} het
as n {rocketship} op haar erf land dan moet sy hom weer terug in die {space} in kry
ja dis moeilik
nee pienk dan pers dan blou dan rooi
dan geel oranje groen
ek hou van my hare
ek weet nie mamma sê dis goud
nie so baie soos myne nie maar nie baie van my maatjies het krul hare nie
ek het nog nie rooi [gevat nie]
partytjie te hou
wat op die partytjie gebeur okay ons eet {sweets} en ons swem baie in die aande dan partykeer bly hulle tot laat dan kyk ons {movie}
ja hierso in die kamer
nou gaan ek in die regte volgorde
{barbie}
{mermaids}
daars n lelike {mermaid} toe stop die mooi {mermaid} die lelike {mermaid}
dan's dit geel dan's dit groen [maar jyt nie geel nie]
{oh no} n gimnastiek juffrou van {ivys}
ek wil maatjies leer om mooi te dans
n {split}
moet ek jou wys
{maybe} as ons klaar is met die oranje
ek weet nie
oeh ek weet {disney world}
baie karakters
minnie muis elsa anna mickey muis
dis n lang [woord]
n {unicorn} wat kan vlieg

ja en omdat ek n {unicorn} van hou
hyt n horing dit gee hom powers
en party {unicorns} het vlerke
{[powers]} om goed wat in die water geval het laat weer uitkom
[en daar is] party {unicorns} wat onder die water kan gaan
ek weet nie
dit was by blou
daai ene
om te swem
ons speel partykeer haai en vissie ek speel baie met my maatjies op my roomys {tube} toe ons nou geswem het dan speel ek op hom saam met my boetie [en] my boetie het vandag sy eerste keer opgekom vir asem
hy word amper drie hierdie jaar
[april]
ja ek dink die twintigste of ietsie soos dit
laaste een
ek hou baie van {freeze touchers}
so jy moet meer iets soos meer as drie of twee maatjies he
en dan moet jy hardloop en as die een wat aan is jou {touch} dan moet jy {gefreeze} wees soos jy gestop het
en as die ander maaitjies jou terug {touch} dan mag jy weer hardloop
as jy nou {gefreeze} is dan moet n ander maaitjie jou kom {touch} maar nie die ene wat aan is nie
as jy die ene wat aan is as hy almal {getouch} het en hulle kry nie kans om
ja te {touch} nie
een oranje
wat bedoel jy wat het ek [getrek]
n dogtertjie
sy het kossies gekoop en toe bring sy dit vir haar familie
sy het hoender gekoop en syt vrugte gekoop
naartjies en lemoene
ek hoop dit is pienk en ses
een en pers
nee ek soek n dogtertjie
[n kat]
[n kat]

die kat het weggehardloop en toe kom hy weer terug
na sy maatjie toe ne toe kom hy weer terug
hulle het gespeel touchers
met hulle stert
vier groen
het #X ook so min soos ek gevat
hy is kleiner
daars n pappa en n mamma en n seuntjie drie waars die vierde groene en dit gaan n kat wees
hulle het dieretuin toe gegaan toe sien hulle die mooiste leeus en partykeer is daar ook luiperde en apies
nee maar ons was al by n reptiel park en daar was regte egte baie groot krokodille daar was baie skilpaaie
en kleines en n baba krokodil
dis lekker
twee groen
ek soek nie groen nie
vier groen
ses geel
twee
drie
vier
vyf
ses ah dis amper soos n hele gesin
hulle het geswem en hulle het gerus
en hulle het
baie gespeel
hulle het die baba kon nog nie {touchers} gespeel het nie so hulle het met die kat gespeel
en hulle het
hmm wat het hulle nog gedoen hulle het geswem en die pappa het die baba vasgehou
want die baba kan nog nie geswem het nie
die aartappel balletjies en groente
dis lekker die speletjie
[twee rooies]
aww {cute}
waars daai rooie aww {cute}

die groot sussie het eendag met die kat gespeel toe hardloop die kat weg toe jaag die sussie die kat en toe gaan hy om die huis toe se sy ah en toe gaan sy ook om die huis toe vang sy die kat

toe het hulle lekker saam gespeel en die kat het nie meer weggehardloop nie want ek dink hyt n voël gesien of ietsies

moet dit ook daar binne

het jy die met #X gedoen

[het #X] met hierdie boks gespeel