THE EFFECT OF DIFFERENT VISUAL MODALITY AND TASK CONDITIONS ON THE NARRATIVES OF TYPICALLY DEVELOPING 9 YEAR OLD CHILDREN

by
Lizanne Engelbrecht

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Supervisor: Mrs. Daleen Klop
Faculty of Health Sciences
Department of Interdisciplinary Health Sciences
Division of Speech- Language and Hearing Therapy

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DECLARATION

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Lizanne Engelbrecht

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ABSTRACT

This study investigated: (1) the effect of two visual modalities (wordless picture book and animated video) on the narratives of typically developing 9 year old children, and (2) the effect of dynamic assessment on the quality of narratives in both visual modalities. Twenty nine typically developing children between the ages of 8 years 5 months, and 9 years 4 months were selected from a higher socio-economic population. Participants were exposed to a wordless picture book and an animated video. Participants' narrative performance was measured in terms of micro- and macro-structure variables in each visual modality, and before and after dynamic assessment in each visual modality. Micro-structure variables included productivity (total number of words, total number of T-units), syntactic complexity (mean length of T-unit) and lexical diversity measures (total number of different words). Macro-structure variables included goal-attempt-outcome (GAO) sequences, and inclusion of GAO elements (goal, attempt or outcome). Results indicated that: (i) both visual modalities elicited narratives of similar quality in terms of micro- and macro-structure variables, and (ii) participants' narratives improved after dynamic assessment.

Key concepts: Narratives, elicitation methods, visual modalities, dynamic assessment.

ABSTRAK

Hierdie studie het (1) die effek van twee visuele modaleite ('n woordlose prentboek en animasie video) op die narratiewe van tipiese ontwikkelende 9 jarige kinders bestudeer, asook (2) die effek van dinamiese assessering op die kwaliteit van narratiewe in beide visuele modaliteite. Nege-en-twintig tipiese ontwikkelende kinders tussen die ouderdom van 8 jaar 5 maande, en 9 jaar 4 maande is vanuit 'n hoër sosio-ekonomiese populasie geselekteer. Deelnemers is blootgestel aan 'n woordlose prentboek en 'n animasie video. Deelnemers se narratiefvaardighede ten opsigte van mikro- and makro-struktuur veranderlikes in elke visuele modaliteit, asook voor en na dinamiese assessering in elke visuele modaliteit is gemeet. Mikro-struktuur veranderlikes het gefokus op produktiwiteit (totale aantal woorde, totale aantal T-eenhede), sintaktiese kompleksiteit (gemiddelde lengte van T-eenheid) and leksikale diversiteit (totale aantal verskillende woorde). Makro-struktuur veranderlikes het gefokus op doelwit-poging-uitkoms (DPU) strukture, en die insluiting van DPU elemente (doelwit, poging of uitkoms). Die resultate het aangedui dat: (i) beide visuele modaliteite narratiewe van soortgelyke kwaliteit in terme van mikro- en makro-sruktuur veranderlikes ontlok het, en (ii) dat deelnemers se narratiewe verbeter het na dinamiese assessering.

Sleutelwoorde: Narratiewe, onlokkingsmetodes, visuele modaliteite, dinamiese assessering.

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GLOSSARY OF TERMS

Abbreviation / Term	Definition
ARW	Afrikaanse Reseptiewe Woordeskattoets.
DA	Dynamic assessment. Dynamic assessment is a process-based approach involving a test-teach-retest model. It consists of three phases. In the first phase, the testing phase, the clinician assesses a child's independent performance without adult assistance. During the second phase, the teaching phase, the clinician provides mediated learning experiences, during which the clinician attempts to teach the principals of the task through questions, explanations or prompts. During the final phase, the retest phase, the clinician measures the change or modifiability of the child's performance following mediation, in other words the outcomes of the learning process. Comparison of a child's independent performance level and higher performance level achieved through adult support is made, and a child's learning potential is also observed (Gutierrez-Clellen & Peña, 2001; Kramer, Mallett, Schneider & Hayward, 2009; Peña, Gillam, Malek, Ruiz-Felter, Resendiz, Fiestas & Sabel, 2006).
Elicitation task	The narrative task required during elicitation, for example personal narrative, story retelling or story generation.
First exposure session	The session that participants were exposed to first.
GAO	Goal-attempt-outcome.
GAO sequence	A sequence of events containing a character's goal, attempt to achieve the goal, and the outcome of the attempt.
Group 1	The group exposed to the wordless picture book in the first exposure session and to the animated video in the second exposure session.
Group 2	The group exposed to the animated video in the first exposure session and to the wordless picture book in the second exposure session.

LI	Language impairment.
MLE or mediation	Mediated learning experiences or mediation.
MLT	Mean length of T-unit.
MLU	Mean length of utterance.
Narrative	Narratives include personal or fictional stories and involve an orderly presentation of events leading to a logical resolution (Roth & Spekman, 1986).
NDW	Total number of different words.
Narrative 1 (First narrative)	Participants' narratives before mediation.
Narrative 2 (Second narrative)	Participants' narratives after mediation.
NDL	Normal developing language.
Second exposure session	The session that participants were exposed to last.
TMT	Toets vir Mondelinge Taalproduksie.
TNW	Total number of words.
TTR	Type token ratio.
Visual modality	The visual stimuli used during narrative elicitation, for example pictures, picture books or animations. In this study, visual modality specifically refers to the wordless picture book or animated video.
ZPD	Zone of proximal development. The distance from the child's unassisted performance level to the performance level the child can reach if assistance or facilitation is provided by an adult (Gutierrez-Clellen & Peña, 2001; Kramer et al., 2009).

1. INTRODUCTION

Children listen to and tell narratives from an early age, and exposure to narratives provides important opportunities for language acquisition. Clinicians typically include assessment of children's narratives in comprehensive language assessments, because of the strong links between narratives and literacy skills and academic success (Bishop & Edmundson, 1987; Kaderavek & Sulzby, 2000).

Narrative assessment has been proposed as a more ecologically valid way of assessing children's language abilities, compared to formal standardised tests, because it provides a more holistic and ecological valid description of a child's communication skills (Botting, 2002; Merritt & Liles, 1989). Narratives can be defined as discourse units representing an orderly sequence of causally related events that result in a logical conclusion (Roth & Spekman, 1986; Stein & Glenn, 1979). Connected discourse and narratives are not fragmented units of communication like utterances required by some formal language tests (Culatta, Page & Ellis, 1983).

Research has shown that both the comprehension and production of narratives can be influenced by a number of contextual parameters, for example the context (formal or informal), story genre (story retellings, story generations or personal stories), narrative theme, the child's experiences, the modality (audio, visual or audio-visual input), and the familiarity of the listener (Liles, 1993). This makes it difficult to select the most appropriate stimuli and task, in order to elicit a good quality representative narrative (Liles, Duffy, Merritt & Purcell, 1995) that provides a valid description of a child's speech and language abilities, including sentence construction, the use of linguistic devices to join meanings across sentences, and general organisation of story content (Merritt & Liles, 1989).

Different modalities, stimuli and tasks can be used during narrative elicitation. Over the past 30 years various studies have investigated the impact of different elicitation methods on children's narrative production (e.g. Gazella & Stockman, 2003; Merritt & Liles, 1987, 1989; Ripich & Griffith, 1988; Schneider, 1996; Schneider & Dubé, 2005).

Story task methods that have been used and compared in research studies include story retellings, story generations of fictional narratives (e.g. Merritt & Liles, 1987, 1989; Ripich & Griffith, 1988) and personal narratives (e.g. Hadley, 1998; Kaderavek & Sulzby, 2000; McCabe, Bliss, Barra & Bennett, 2008). Research has shown that personal narratives are generally shorter than fictional narratives, but more functional and supportive in a child's daily communication and social interactions with others (Johnston, 2008; McCabe et al., 2008). On the other hand, story retellings and story generations of fictional narratives usually provide more structure (e.g. through pictures) and may be easier for clinicians to control than personal narratives. Fictional narratives also have greater possibility for standardisation than personal narratives, as the same procedures can be used with different cultural and linguistic populations.

In studies using fictional narratives in assessment, researchers have used some kind of visual prompt or modality to support the storytelling or retelling of narratives. The visual modalities most often used in research studies are wordless picture books and sequenced picture cards (e.g. Botting, 2002; Pearce, 2003; Schneider, 1996; Schneider & Dubé, 1997, 2005; Shapiro & Hudson, 1991; Spinillo & Pinto, 1994; Tager-Flusberg, 1995; Tönsing & Tesner, 1999). A few studies have also explored the use of more dynamic visual modalities, such as animations during narrative presentations (e.g. Dolloghan, Campbell & Tomlin, 1990; Gazella & Stockman, 2003; Gibbons, Anderson, Smith, Field & Fischer, 1986; Liles, 1985; Scott & Windsor, 2000; Sharp, Bransford, Goldman, Risko, Kinzer & Vye, 1995).

Research has shown that animations may be easier for children to understand than sequenced pictures or wordless picture books, because they do not require children to make inferences about events or actions that are not depicted, like in still pictures from books (Schneider & Dubé, 2005). Animation can also show story events in a more realistic and natural, familiar way for children (Gazella & Stockman, 2003; Sharp et al., 1995). Therefore, animations may provide more complete story presentations, foster better recall of actions and events, and keep children's attention (Dollaghan et al., 1990; Gazella & Stockman, 2003). On the other hand, the rapid pace and engaging quality of animations may overwhelm children, especially younger children (Dollaghan et al., 1990; Gazella & Stockman, 2003).

Stories presented through dynamic visual presentations, such as animations shown on television, form a substantial part of many children's pastime (Rideout, Foehr & Roberts, 2010). This may make animations a more naturalistic and familiar context for story telling (Gutierrez-Clellen & Iglesias, 1992), because retelling favourite televised stories may be a more common experience than retelling stories from other sources, for example books. The availability of modern multi-media technology, such as the digital capability to create animations, together with the fact that it may be a more familiar form of story presentation, provides motivation for therapists and researchers to consider exploring the use of these more dynamic visual modality story presentations in their narrative assessment protocols.

Apart from the task methods and modalities used during narrative assessment, the way narratives are analysed is also important to consider in order to obtain a valid description of a child's language abilities. Narratives are usually analysed on two levels, namely micro-structure and macro-structure. Micro-structure analyses usually focus on children's internal linguistic structures of narratives (Justice, Bowles, Kaderavek, Ukrainetz, Eisenberg & Gillam, 2006). This includes language productivity, complexity and diversity measures. Macro-structure analyses focus on the global organisation of narratives (Justice et al., 2006). Several approaches to macro-structure analyses have been developed, for example high-point analysis (Peterson & McCabe, 1983; Labov, 1972), narrative level analysis (Applebee, 1978), story grammar analysis (Stein & Glenn, 1979) and the causal network model of analysis (e.g. Trabasso & Sperry, 1985; Trabasso & van den Broek, 1985; Trabasso, van den Broek & Suh, 1989).

Over the past 10 years, the focus of macro-structure analyses is more towards goal-based causal organisation analyses, based on the theories of the story grammar model (Stein & Glenn, 1979) and the causal network model (Trabasso & van den Broek, 1985). Research suggests that in order for children to tell coherent narratives, they must have knowledge of the goals or plans of the characters that cause other events, attempts or outcomes in the story (Lorch, Berthiaume, Millich & Van den Broek, 2007; Trabasso, Stein, Rodkin, Munger & Baughn, 1992). These are known as the goal-attempt-outcome (GAO) sequences in narratives (Flory, Millich, Lorch, Hayden, Strange & Welsh, 2006). Stories with a higher number of GAO sequences have also

been shown to improve story recall (Hayward, Gillam & Lien, 2007; Trabasso & Sperry, 1985; van den Broek, Lorch, & Thurlow, 1996). The critical age period of development of comprehension of causal structure and goal plans (i.e. GAO sequences) is between the ages of 3 and 9 years (Trabrasso & Nickels, 1992).

The task methods, modalities and analysis measures used in narrative assessment are important variables that researchers and clinicians must keep in mind. However, the way narrative assessment is conducted can also play a significant role in children's performance. Researchers have motivated for a more dynamic assessment of children's language and narrative abilities (e.g. Gutierrez-Clellen & Peña, 2001), because limited test performance may reflect different learning experiences, lack of educational opportunity, culturally and linguistically diverse background, and not necessarily a language deficit.

Dynamic assessment is a process-based approach and involves assessment of a child's modifiability and performance in response to learning situations or adult support, rather than a static one-off assessment of a child's performance (Gutierrez-Clellen & Peña, 2001; Kramer et al., 2009; Peña et al., 2006). Dynamic assessment of language abilities and also narratives, can assist clinicians in more accurately diagnosing children with language impairments, and children with language differences, determining the amount and type of assistance as child may require, as well as setting intervention goals (Pena et al., 2006). Therefore, dynamic assessment of language and narrative abilities is an area that clinicians and researchers can explore and implement during their assessment protocols of children.

The current study was undertaken to investigate the effects of different visual modalities of narrative presentation, as well as a form of dynamic assessment on narrative generation of typically developing 9 year old children. Two different visual modalities (wordless picture book and animated video) without audio input were chosen as elicitation modalities. These two visual modalities were chosen, because no other study has investigated two visual modalities of the same story without accompanying audio input. The other reason for the choice of visual modalities was that research has indicated that more dynamic visual modalities, such as animations result in better recall of certain aspects of a story (e.g. actions, causal sequences) and

are more engaging than still pictures. A wordless picture book, on the other hand, may result in better recall of other story aspects (e.g. use of general world knowledge to draw inferences).

The content of the two visual modalities were designed to elicit GAO sequences in children's narratives. No other studies could be found that have investigated the modality presentation effects on children's production of goal directed narratives and the inclusion of GAO sequences. Therefore, a gap exists with regards to the comparison of these two specific visual modality presentations and the assessment of GAO sequences in children's narratives.

Dynamic assessment of narratives has been investigated in previous international studies, for example Kramer et al. (2009) and Peña et al. (2006), but no studies on the effects of dynamic assessment on typically developing South African children's narratives have been found.

1.1   STRUCTURE OF THESIS

The thesis is divided into the following chapters:
- Chapter 1 – Introduction: This chapter provides a description of the motivation for the topic of this study.

- Chapter 2 – Literature review: This chapter presents the relevant background information for this study, previous narrative elicitation and analysis studies are reviewed.
- Chapter 3 – Methodology: In this chapter, a description of the procedures and protocols used is provided.

- Chapter 4 – Results and Discussion: This chapter provides an outline of the findings and presents a brief discussion of the results.

- Chapter 5 – General Discussion: This chapter presents the conclusions of this study, the limitations, recommendations for future work and the clinical implications of the results.

- References: A list of all the resources cited.

- Appendices: This section contains supplementary data and information.

2. LITERATURE REVIEW

2.1   INTRODUCTION

This study investigated the effect of two visual elicitation modalities and dynamic assessment on the narrative production of 9 year old typically developing children. This chapter aims to provide parts of the theoretical framework underlying this study. *First*, a broad description of the different types of discourse and the rationale for including narratives in speech and language assessments will be provided. The role of narrative discourse in children's communication and academic success will also be explained. *Second,* a description of available narrative assessment tests and problems regarding these norm based assessments will be discussed. The usefulness of narratives in identifying LI and the cultural, linguistic and socio-economic aspects of narratives will also be discussed. *Third,* current assessment practices are explored in terms of elicitation procedures and modality differences. *Lastly*, the different approaches to narrative analyses and the application of dynamic assessment on children's narrative production are discussed.

2.2   DISCOURSE

The term 'discourse' includes the use of spoken or written language, and can be defined in different ways, for example connected language use, language use beyond word and sentence level, or language use in a social context (Cameron, 2001; Khoury, 2008). Discourse forms an integral part of our lives and communication with other people. It is also an important skill for children to use in the academic context, as well as during social interactions with peers. School-aged children are expected to understand and use a variety of discourse forms in their daily communication, such as relating personal experiences, retelling stories, following directions and describing or explaining factual events (Hadley, 1998). Research has shown that children with discourse difficulties have problems with learning and functioning in the academic school context, as well as problems with social interactions with peers (Bishop & Edmundson, 1987; Crais & Lorch, 1994). Inclusion of children's discourse skills in language assessment procedures is essential to describe children's functional communication, as well as advanced language abilities and linguistic vulnerabilities (Hadley, 1998). Identification of children with discourse difficulties can assist clinicians in describing children's communication disorders.

2.2.1   DIFFERENT DISCOURSE TYPES

There are three main types of discourse, namely conversational discourse, expository discourse and narrative discourse. *Conversational discourse* can be described as unplanned, interactional and less formal exchanges between two or more partners, where speakers rely primarily on utterance-level planning (planning of one utterance at a time). In other words, speakers do not necessarily plan the discourse beyond their next utterance or speaking turn (Hadley, 1998). Speakers can also rely on feedback from the conversation and contextual cues such as gestures, facial expressions and intonation to monitor their utterances (Greenhalgh & Strong, 2001). Conversational discourse is highly valued in social interactions, for example discussing movies or social events, exchanging opinions or sharing information (Nippold, Hesketh, Duthie & Mansfield, 2005). Research has, however, questioned the usefulness of conversational discourse during language sampling of older children, as it may not be challenging enough to reveal communication breakdowns, and does not provide a detailed and accurate description of children's syntactic skills (Gummersall & Strong, 1999; Hadley, 1998; Scott & Windsor, 2000).

Narrative and expository discourse require speakers to engage in higher order planning known as *text-level* planning and the use of decontextualised language, in other words, where there is no shared physical context between speakers. Narrative and expository discourse requires speakers to plan, organise, formulate and monitor their communication of coherent sequences of events to their listeners. *Expository discourse* is frequently used and highly valued in academic settings. Expository discourse can be described as conveying factual or textual information such as descriptions, directions and explanations (Hadley, 1998; Nippold et al., 2005). For example, a child may be requested to summarise texts or justify answers to questions. The use and comprehension of expository discourse has been regarded as an important skill, contributing to academic success, especially in older children (Gillam, Peña & Miller, 1999).

Narrative discourse forms a natural part of school-age children's daily communication, for example, telling or retelling stories, reading stories, telling personal experiences and writing fictional stories (Peterson, 1994). Narrative discourse generally includes personal stories or fictional stories and involves an orderly presentation of events that lead to a logical resolution (Roth & Spekman, 1986). Narrative discourse, similar to expository discourse, requires children to use longer decontextualised language units, during which they cannot rely on non-linguistic or contextual cues as in conversational discourse (Price, Roberts & Jackson, 2006). Therefore, the language use in narratives is distanced from the immediate context. Children are required to draw upon their knowledge of people, contexts, social interactions and linguistic structures during narrative production (Hudson & Shapiro, 1991). Johnston (2008) described this language use outside the immediate context in narratives as the "there and then", unlike conversational language which is about the "here and now". Therefore, narrative discourse is linguistically more challenging for the speaker than conversational discourse, and requires knowledge of vocabulary and grammar, as well as overall organisation of the narrative (Eisenberg, Ukrainetz, Hsu, Kaderavek, Justice & Gillam, 2008).

2.2.2   NARRATIVES AND LITERATE LANGUAGE FEATURES

Narratives form the developmental bridge from oral language (e.g. conversational discourse) to more formal, decontextualised forms of written language (Kaderavek, Gillam, Ukrainetz, Justice & Eisenberg, 2004). Literate language can be defined as highly decontextualised language, where critical information is conveyed exclusively by words and sentences (linguistically), rather than through non-linguistic or contextual cues, like gestures and intonational patterns (Westby, 1991). It also requires the use of more complex grammar and vocabulary than conversational speech (Horowitz & Samuels, 1987 as cited in Westby, 2005; Stadler & Ward, 2005). Literate language or decontextualised language in a child's speech is associated with the higher-order language used in books and in the classroom (Johnston, 2008; Westby, 1991). Pelligrini (1985 as cited in Westby, 2005) described four features in narratives that are considered to be markers for literate language use: conjunctions, mental and linguistic verbs, adverbs and elaborated noun phrases.

Literate or written language features (for example use of past tense forms, formal introduction of characters, use of relative clauses and prepositional phrases and appropriate coordinating conjunctions), are characteristic of many narrative forms ranging from oral to written narratives (Kaderavek & Sulzby, 2000). Narrative discourse provides opportunities for children to develop and use this higher level of language, and to incorporate literate language features in their communication (Stadler & Ward, 2005). Studies on literate language features in the narratives of children, have found that these features distinguish children with NDL, from children with LI (Eisenberg et al., 2008; Greenhalgh & Strong, 2001; Curenton & Justice, 2004; Westby, 2005; Greenhalgh & Strong, 2001).

Greenhalgh and Strong (2001) stressed the importance of assessment of literate language features for early identification of children with language limitations which could negatively impact on their academic success. This is because literate language skills are important for acquisition of literacy (Allen, Kertoy, Sherblom & Pettit, 1994). The inclusion of narratives in speech-language assessments allows for the assessment of literate language features (Eisenberg et al., 2008), which in turn can help predict children's literacy skills (McCabe & Rollins, 1994) and academic success (Bishop & Edmundson, 1987; Culatta et al., 1983).

2.3   NARRATIVE ASSESSMENT

"Now, you tell me the story"... or ... "Tell me about your holiday...". These are phrases often employed by researchers and clinicians during language sampling procedures. Researchers and clinicians have shifted their attention to the assessment of more holistic and longer linguistic units of discourse, such as narratives (Merritt & Liles, 1987), as most existing standardised language tests only assess children's knowledge of isolated language rules, rather than integrated communicative functioning (Culatta et al., 1983). Narrative assessment is regarded as an ecologically valid tool to efficiently and authentically examine a number of language aspects, such as grammatical measures, fluency, story structure and pragmatics (Botting, 2002). Fey, Catts, Proctor-Williams, Tomblin and Zhang (2004) argue that even if children's standardised test scores indicate language skills within the typical range, clinicians should be aware that children could still have significant problems with integrated

communication or connected discourse. Narratives also have high content validity, being a more natural form of discourse representing the basis of many childhood speech acts (Botting, 2002).

2.3.1   NORM-BASED NARRATIVE ASSESSMENTS

Narrative norms describe the developmental progression of some components or complexity measures of narrative abilities (Liles, 1993) that increase with age (Johnson, 1995). Currently, there are several sources of data regarding narrative norms available to clinicians and researchers, for example, published studies of narrative development (e.g. Stein & Glenn, 1979) and diagnostic tests that assess aspects of narrative language (e.g. Vorster, 1980a; Renfrew, 1991). The main problem with relying on existing normative data is that norms can be influenced by several methodological factors, such as age, size, geographic location, and socio-economic, cultural or language skills of different study populations. Norms may further be influenced by the different elicitation tasks (e.g. story retell, story generation or personal narrative), methods (e.g. wordless picture books, single pictures or videos) and analysis procedures employed (Johnson, 1995). Furthermore, there is a need for the development of narrative protocols and norms for use in the multi-cultural and multi-lingual South-African context, to assist clinicians in more accurate descriptions and diagnostic decisions of children's narrative performance. Some of the most popular available narrative assessment tests are discussed next.

The Bus Story (Renfrew, 1991) is a standardised test frequently used by clinicians, and consists of a story retelling task with a story picture book. The story is about a red bus that runs away and the events surrounding the bus getting back on the road again. This test is standardised on a British population of children who are, for example, familiar with red buses as a means of transportation. South African children, particularly children from backgrounds with limited exposure to children's books, may not be able to relate to the story format or the portrayal of buses and trains in this test. A further limitation is the small age range of the test (4 to 7 years). The test assesses recall of information and sentence structure and length, but does not allow for the assessment of macro-structural aspects like story grammar or structural complexity. Assessment of macro-structural aspects of narratives are important,

because it provides an indication of a child's ability to organise a coherent narrative with causal and temporal relationships between events. They also provide information regarding a child's general world knowledge and his/her social and emotional experiences (Justice et al., 2006; Liles et al., 1995).

The Test of Narrative Language (TNL) (Gillam & Pearson, 2004) is a standardised, norm-referenced test used to assess narrative comprehension and production of 5 to 12 year old children. The test includes engaging, colourful pictures and is quick and easy to administer and score. The test consists of three narrative formats (sequence picture cues, single picture cues, and no picture cues) and includes a wide age range. The TNL is also effective in identifying children with language impairments. The TNL, however, is standardised on an American population of children, making it less applicable to South African children. The pictorial content of the test may also not be applicable to the whole South African population, especially children from lower socio-economic backgrounds that may not be familiar with the content. For example, the test includes an oral story about going to McDonald's restaurant and stories about a dragon and aliens. The content of the McDonald's story require underlying knowledge of what to do at a take away restaurant, which many lower socio-economic children might not be familiar with. The stories of the dragon and aliens are themes that are usually associated with fantasy stories, often found in children's books and on television. Children with limited exposure to books and television may be unfamiliar with these story genres and therefore, produce narratives that are not representative of their language abilities.

Berman and Slobin (1994) have documented narrative norms of normal developing children by several studies for the use of the frog story *(Frog where are you?)* (Mayer, 1969). This story is the most popular wordless picture book used in narrative research and has been used to investigate the differences in children's narrative structure and content. It has been used in cross-linguistic studies (Berman & Slobin, 1994), studies of normal language development and specific language impairment (e.g. Greenhalgh & Strong, 2001; Norbury & Bishop, 2003), as well as with studies of developmental differences in story comprehension and representation (Trabasso & Nickels, 1992). The story contains 24 pictures and is about a boy, who loses his frog, and then looks for the frog in several locations and finally finds his frog and takes it

home. The applicability of this book to the multi-cultural and multi socio-economic South African population is questionable. This is because, firstly, due to the content of the story, most South African children would not be familiar with the idea of having a frog as a pet. Secondly, this book has mostly been used on American and European children from middle-class socio-economic backgrounds, suggesting that the available norms are not applicable for the broader South African population.

The Test for Oral Language Production (TOLP) (Vorster, 1980a) is a standardised test using narratives to assess children's language production abilities. Although this test was developed in South Africa, it was only standardised on one segment of the South African population, namely white middle-class children. The photo sequences portray only white children, and the content of the stories seems outdated and inappropriate, e.g. a child receiving a hiding from his mother for taking dessert from the fridge. This test also only measures micro-structural aspects and not macro-structural aspects such as story schema organisation.

The limitations of the above mentioned narrative assessment confirms the need for narrative assessments appropriate for the South African population. The thematic and pictorial content of such assessments should be designed to be applicable and relevant to the majority of the South African population of children. This will also ensure that valid norms can be established for a South African population of children.

2.3.2   NARRATIVES AND IDENTIFICATION OF LANGUAGE IMPAIRMENTS

Narratives have been used as an effective tool to distinguish children with language impairment (LI) and normal developing language (NDL) (Botting, 2002; Greenhalgh & Strong, 2001; Liles et al., 1995). Many studies have compared narratives of children with NDL and children with LI, using a variety of elicitation and analysis methods with similar results. Compared to children with NDL, children with LI have been shown to produce poorer narratives during story retelling and story generation tasks (Liles et al., 1995; Merritt & Liles, 1987; Tager-Flusberg, 1995). The main characteristics of the narratives of children with LI can be described as narratives that are shorter in length, containing fewer story grammar components and episodes,

reduced sentence complexity and fewer and less complete cohesive ties (Botting, 2002; Liles, 1985, 1987; Merritt & Liles, 1987; Norbury & Bishop, 2003). These results further motivate for the inclusion of narratives in language sampling procedures to assist clinicians in diagnostic decisions about children's language abilities.

2.3.3 CULTURAL, LINGUISTIC AND SOCIO-ECONOMIC ASPECTS OF NARRATIVES

In South Africa clinicians encounter children from different cultural, linguistic and socio-economic backgrounds. This demands language assessment instruments that are more culturally, linguistically and ecologically valid for the assessment of the diverse population. Children from different cultural and socio-economic backgrounds may perform lower on formal language tests, often standardised on other populations, because they may not be familiar with the content or expectations of the tests (Laing & Kamhi, 2003; Kramer et al., 2009). In the South-African context, narratives are increasingly being used as a language assessment tool, since formal language tests are not always suited for use with the heterogenic, multi-cultural population that the South African clinician is faced with on a daily basis (Southwood & Russell, 2004).

Narrative assessment has shown to be less cultural and linguistically biased, and is regarded as a more appropriate medium of language evaluation because narratives are a universal genre used across languages and cultures (Westby, 1994 as cited in Kramer et al., 2009). Therefore, narratives provide a context that is familiar to most children. However, clinicians must also be aware of the differences in children's narrative performance across various cultural, linguistic and socio-economic populations (Berman & Slobin, 1994; Gutierrez-Clellen & Quinn, 1993; Spinillo & Pinto, 1994). Several factors can contribute to differences in children's narrative performance.

Narrative performance is influenced by linguistic and cultural differences. A cross-linguistic study by Berman and Slobin (1994) indicated similarities in the development of narratives across different languages. They analysed narratives of Hebrew, English, Spanish, German, and Turkish children and adults using the same

wordless picture book. Parallel macro-structure narrative development across ages and languages was found, indicating that children may develop a global structure for story that is independent of language. However, linguistic and rhetorical differences in terms of verb tense, locative movement and connectivity occurred in the way stories were told. For example, notable differences between Spanish and English speakers' narratives were found. English speakers for example, used predominantly past tense forms, whereas Spanish speakers used mainly present progressive tense forms.

The work of Berman and Slobin (1994) suggests that linguistic differences influence narrative micro-structure, while cultural differences have a bigger influence on narrative macro-structure. For example, Gutierrez-Clellen and Iglesias (1992) reported that Spanish children do not include all the story grammar components, and the order of their story events differed from English children. Clancy (1980 as cited in Gutierrez-Clellen & Quinn, 1993) found that narratives of Japanese children and adults differ from the prototypical story grammar model. In this study, story episodes included only a complication and a consequence, and settings and other critical narrative information related to story grammar analyses were omitted. The results of Clancy indicate that differences or deviations from the prescribed story may be a result of a speaker's perspective and interpretation of the purpose and context of a story telling task (Gutierrez-Clellen & Quinn, 1993).

The topic or context of the elicitation method used during narrative assessment may also contribute to the differences in narrative production of children form diverse cultural, linguistic and socio-economic groups. Different elicitation methods (e.g. personal narratives, pictures or videos) and topics (e.g. accidents, trips, holidays) may elicit different types of narratives (Gutierrez-Clellen & Quinn, 1993). The reason for this is that children of different cultural and socio-economic backgrounds may have different previous knowledge, familiarity and experience of the narrative task or topic.

Children from lower socio-economic or different cultural backgrounds may, for example, not be familiar with a story task of "going to a restaurant" and have difficulty telling the story because they have not been to restaurants before (Gutierrez-Clellen & Quinn, 1993). Some children may even "misremember" story events to be

more like stories they have heard in their families or culture (Gutierrez-Clellen, Peña & Quinn, 1995; Heath, 1986; McCabe & Bliss, 2003). Narratives elicited via pictures or picture books also require familiarity with and exposure to books, which may not be a common experience for children from lower socio-economic backgrounds. Relation of personal experiences is also not a common practice in all cultural groups (Heath, 1986), and children from different cultural backgrounds might not respond with the same naturalness and enthusiasm when prompted to relate personal experiences. Therefore, poorer narratives or deviations in narratives may in fact reflect a lack of experience and knowledge and not a narrative deficit.

McCabe and Bliss (2003) stressed that clinicians should be sensitised to the fact that some children will produce different narratives to what is expected in the clinical setup, and that clinicians using narratives to assess children from diverse cultural and linguistic populations should be aware of narrative variability as a by-product of cultural and individual differences (Gutierrez-Clellen & Quinn, 1993). Narrative assessments should therefore include appropriate assessment procedures to identify these narrative differences from narrative deficits. Gutierrez-Clellen and Quinn (1993) stressed the importance of unbiased narrative assessment approaches, in order to effectively assess children from diverse cultural, linguistic and socio-economic backgrounds. A proposed approach is a dynamic assessment of narrative skills, which analyse a child's narrative style and the effects of contextualisation on narrative performance. This dynamic assessment approach to narrative assessment will be discussed in more detail later in this chapter.

2.4 ASSESSMENT PRACTICES

Researchers and clinicians are faced with a range of choices pertaining to narrative assessment procedures. During narrative assessment, the clinician or researcher must consider the elicitation method and procedures when gathering narrative samples as this can affect the complexity and the nature of the narrative elicited (Schneider & Dubé, 2005, Liles, 1993; Pearce, 2003). Crais and Lorch (1994) stated that clinicians should be diligent and creative when choosing their narrative assessment methods, in order for the methods to be reliable and ecologically valid.

There are three main elicitation task methods that have been used in research of narrative elicitation of children: story-retelling tasks, story-generation tasks and personal narratives. Currently no consistent distinction exists regarding the most appropriate task method of collecting and analysing stories of children. Therefore, each of the three tasks will be critically discussed and compared below.

2.4.1 PERSONAL NARRATIVES, STORY GENERATIONS AND STORY RETELLINGS

A personal narrative is regarded as an account of a personally experienced event (Hudson & Shapiro, 1991). Personal narratives may be more relevant and functional than generation or retellings of fictional narratives in many contexts, because all people are expected to relate personal experiences on a daily basis, for example "What did you do this weekend?" or "Tell me what happened in the accident" (McCabe & Bliss, 2003; Owens, 2004).

Research studies have compared children's production of personal and fictional narratives. Kaderavek and Sulzby (2000) adapted the high-point analysis protocol of Peterson and McCabe (1983), and investigated pre-school children's narratives in terms of beginnings (introduction of characters and initiating actions), middles (extension of character's actions) and ends (resolution of the story). They found that personal narratives contained more middles and ends than fictional narratives. One of two case studies by Hadley (1998) of children with LI, found that an 8 year old child's personal narratives were structurally more complex than his retelling of fictional narratives. Furthermore, his fictional narratives were longer in length than personal narratives, but included more production errors and mazes per utterance.

The results of Hadley (1998) concur with McCabe et al. (2008), who used high-point analysis to compare oral personal narratives and fictional narratives of 7 to 9 year old children with LI. They found that their fictional stories were longer, but were more often not classified as narratives, because children provided picture descriptions rather than a series of events. According to the high-point rating scale used, the fictional narratives produced by children were also judged to be of lesser quality than personal narratives.

The above mentioned studies seem to indicate that personal narratives result in shorter narratives than fictional narratives, but that they are often more complex and more functional and supportive in a child's daily communication and social interactions with others (Johnston, 2008; McCabe et al., 2008). While personal narratives may be used more in daily communication and interactions with other people than fictional narratives, it may be more difficult to control for length and topic and thus be more difficult for clinicians to transcribe than fictional narratives. Relation of personal experiences is also not a common practice in all cultural groups (Heath, 1986).

Most research into the comparison of different narrative elicitation task methods has focused on comparing story generations and story retellings of fictional narratives of children (e.g. Merritt & Liles, 1987, 1989; Ripich & Griffith, 1988). Studies comparing story generation and story retelling tasks will now be discussed.

Ripich and Griffith (1988) compared story generations and story retelling with pictorial support in 7 to12 year old children with and without language impairments. They found that both groups' story retellings were longer than story generations and contained fewer inaccuracies. The results of Merritt and Liles (1989), who compared 9 to 11 year old children's retellings of videotaped oral presentations and story stem completions (story generation) are consistent with Ripich and Griffith (1988), in that story retellings contained more story grammar components than story generations. Botting (2002) compared the narratives of children with specific language impairment with those of children with pragmatic language impairments. A story retelling task with sequence pictures and a story generation task with a wordless picture book were used. In contrast with the results obtained by Merritt and Liles (1987, 1989) and Ripich and Griffith (1988), both groups produced shorter word lengths during the story retelling task.

Tönsing and Tesner (1999) compared three different tasks, including story generation, story retelling and a personal narrative. They compared personal narratives using the conversational map procedure (McCabe & Rollins, 1994), with story generations and story retellings (using puppets and pictures) of fictional narratives of 4 to 6 year old South African children with normal language skills. Narratives were compared in terms of length and structural organisation using story grammar components based on

the procedures used by Stein & Glenn (1979). Tönsing and Tesner (1999) concluded that story retellings in response to pictures resulted in more structurally complex narratives than story generations. Their results concurred with Merritt and Liles (1989) and Ripich and Griffith (1988), indicating that retold narratives resulted in more complex stories than generated narratives. They also found that personal narratives were shorter, but contained more complex episodes than fictional narratives, correlating with previous research (Hadley, 1998; McCabe et al., 2008; Peterson & McCabe, 1983).

To summarise, story retelling tasks allow the clinician to control aspects like the topic, content, grammatical complexity, input modality and story length (Gazella & Stockman, 2003; Liles, 1993; Merritt & Liles, 1989). Narratives produced during a story retelling task also make transcription and scoring easier, due to the clinician's familiarity with the contextual information of the narrative (Gazella & Stockman, 2003; Liles, 1987; Ripich & Griffith, 1988). A story retelling task may also be easier for the speaker, because narrative structure is provided, although the speaker is not expected to produce exactly the same words as in the presented story. The provision of the narrative structure in a story retelling task may focus more on assessment of the ability to retrieve recent information and content (Pearce, 2006) and linguistic structuring of narratives (Gazella & Stockman, 2003). However, a story retelling task requires less creativity and imagination of the speaker, and the speaker's true ability to structure a narrative may not be evident (Tönsing & Tesner, 1999).

A story generation task on the other hand, is regarded as a more difficult task than a story retelling task and requires speakers to create a story using their own words. It also allows them to be more creative and original in their story telling (Gazella & Stockman, 2003). Liles (1993) argued that a story generation task is more representative of spontaneous communication. Speakers must rely on their own internalised narrative organisation to produce a narrative during a story generation task and can rely less on direct input from structured content provided to them through story retelling tasks (Liles, 1993). Story generation tasks are also more demanding of experience, working memory and linguistic formulation (Johnson, 1995; Naremore, 1997; Ripich & Griffith, 1988). Difficulties in story generation tasks may suggest limited experience with the presented story topic or knowledge of the

story structure of narratives, and limited working memory skills to support narrative organisation (Hudson & Shapiro, 1991; Naremore, 1997).

In conclusion, research has presented different viewpoints regarding the most appropriate elicitation task to assess narrative skills in children. Most research studies used fictional narratives in assessment and intervention (e.g. Hayward & Schneider, 2000; Johnston, 2008; Justice et al., 2006; Gillam & Pearson, 2004; Swanson, Fey, Mills & Hood, 2005). In a multi-cultural population such as South Africa, where personal story telling may not be a common social practice in all cultures, it may be more appropriate to elicit fictional narratives, rather than personal narratives of children. Fictional narratives may provide more structure (e.g. through pictures) and therefore provide children with better knowledge of what is expected of them during the task. The use of fictional narratives may also result in more valid and reliable data, because the same procedure can be used across different cultural and linguistic populations.

2.4.2   AUDIO, AUDIO-VISUAL AND VISUAL ELICITATION MODALITIES

A variety of visual story presentations have been reported to elicit narratives of children, indicating that clinicians may consider it important to use some kind of visual input to aid story recall and enhance story input (Gazella & Stockman, 2003). Research using visual modalities to make comparisons of children's narratives has mainly focused on the comparison of narratives in response to orally (audio) presented narratives and visually or audio-visually presented narratives with pictures or video presentations. An overview of studies focusing on the comparison of the effects of audio, visual or audio-visual modalities on children's narratives is now provided.

Schneider and Dubé (2005), Schneider and Dubé (1997) and Schneider (1996) compared narratives produced in response to pictures-only, retold orally presented stories and retold stories presented both orally and/or pictorially. Schneider (1996) found that 5 to 9 year old children with LI produced the largest number of story grammar units in response to the audio-only condition (story retelling with no pictures) compared to the picture-only condition. The combined audio-visually

presented stories seemed to hamper children's story retelling and the pictures appeared to distract them from processing and/or reformulating the oral version of the story.

Schneider and Dubé (1997) made adaptations to the procedures of Schneider (1996), and investigated the presentation effects on the use of referring expressions in narratives of two groups of typically developing children (pre-school and second grade children). They found that normally developing pre-school children used references more adequately in response to an audio-only presentation than when formulating stories themselves from pictures (picture-only). No modality bias was found in the narratives of older, second grade children. Older children used adequate referencing in all the conditions. This suggests that older early elementary school-aged children may be less influenced by the elicitation modality than younger pre-school children.

Schneider and Dubé (2005) used the same three elicitation conditions as Schneider and Dubé (1997), as well as the same study populations. However, Schneider and Dubé (2005) investigated the impact of the presentation modalities on story grammar units produced by typically developing children. Schneider and Dubé's (2005) results indicated that pre-school children and second grade children performed similarly during the picture-only condition, with the visual-only condition eliciting the least story grammar units for both age groups. During the audio-only and combined audio-visual presentations, developmental differences occurred. Pre-school children produced more story grammar units in the audio-visual condition than in the picture-only condition. Grade two children produced more story grammar units in both audio conditions (audio-only and audio-visual) than in the visual-only condition. They concluded that children have poorer narrative performance in visual-only tasks (pictures), because they need to apply their own internalised story knowledge to interpret the information and produce a coherent narrative. Stories presented through audio input resulted in more story grammar components and more adequate referencing.

Ripich and Griffith (1988) found that 7 to 12 year old children with learning disabilities, and younger children without learning disabilities, produced less story grammar units during story telling and retelling tasks in visual-only conditions than in story retelling tasks in audio-only conditions. However, here the pictures could be seen by the listener as well, increasing the assumption of shared knowledge of the story. They stated that the pictures seemed to affect the storyteller's assumption of the listener's need for information, and that the shared context of the pictures may have prohibited the inclusion of certain information.

Taking into account the results of the above studies using audio-only, audio-visual and visual-only modalities using pictures as visual modalities, the following conclusions can be drawn. Narratives elicited with the support of pictures are of the poorest quality (in terms of story grammar units and adequate references) for all age groups and language abilities. This may be because pictures not accompanied by an oral story, require children to translate visual information into verbal information during their story telling (Schneider & Dubé, 1997). Narratives presented through oral telling result in the best narratives for all age groups, especially younger children. Lastly, the presentation modality has less effect on older children's narratives than those of younger children.

The studies discussed so far used pictures as visual support during presentations. However, research has also documented the use of more dynamic visual modalities such as videos in comparison to audio modalities. Important studies comparing dynamic visual modalities with audio modalities during narrative presentations are now discussed.

Beagles-Roos and Gat (1983) compared the narratives of two groups of children (6½ to 8 years and 9 to 10½ years) following exposure to a televised (audio-visual) and radio (audio) presentation of the same story. They concluded that story recall was the same across the two modalities for both age groups, except for there was recall of more characters in the audio-visual presentations. The audio-visual presentation also seemed to enhance the use of actions to draw inferences, while the audio presentation aided in better recognition of verbal content. The audio presentation also seemed to encourage children to draw upon their own world knowledge to motivate their

inferences about the affect of characters, intentions and mental attributes of characters, as well as distances and actions in the story.

Gibbons et al. (1986) investigated the effects of an audio-visual video presentation and an oral telling (audio-only) of the same story, on narratives of 4 and 7 year old normal developing children. They concluded that audio-visual combinations resulted in better narratives than audio-only presentations in terms of more accurate recall of the story and more inferences. Other studies have also supported the audio-visual over audio presentations. For example, Hayes, Kelly and Mandel (1986) found that children showed more comprehension difficulties and distorted recall of information during the audio-only presentation.

A more recent study comparing audio-only and audio-visual presentations with more dynamic visual input is that of Gazella and Stockman (2003). They compared typically developing 4 to 5 year old children's retell narratives and question responses about the same story under audio-only (oral) and audio-visual (video) conditions. They found no significant modality bias and no significant differences in terms of global language measures such as the amount of talk, lexical diversity and syntactic complexity. Gazella and Stockman's (2003) results concur with Baggett (1979), who presented adults with a wordless movie and an audio taped version of the same story as the movie. It was found that the stories produced in response to both modalities were similar in structure, but that participants recalled specific details of the wordless movie better.

In summary, the above studies using more dynamic visual modalities, such as videos in comparison with other modalities, were mainly interested in comparing audio and audio-visual modalities. The tendency when using dynamic visual modalities (videos) and audio-only modalities seems to be towards narrative of equal quality in both the audio and audio-visual modalities. The studies that observed differences in modalities, favoured the audio-visual modalities above audio-only modalities. This may be because children's attention is better focused and maintained in the audio-visual modality with a video and certain aspects of events, such as characters' actions are more direct and easily comprehended than in audio-only modalities (Gazella & Stockman, 2003; Gibbons et al., 1986).

2.4.3 DIFFERENT VISUAL ELICITATION MODALITIES

Visual modalities are frequently used during narrative elicitation (Gazella & Stockman, 2003) and a variety of procedures using different visual modalities exist for researchers and clinicians to choose from. They must, however, be aware of the potential impact of different visual elicitation modalities on children's narratives. This is important because the visual modality (such as pictures, books, puppets or videos), and the task (personal narrative, story generation or retelling) influence the contextual support that is provided, and have an impact on the type and quality of the narratives produced by children. These aspects in turn influence the validity of the narrative assessment (Schneider & Dubé, 2005). Therefore, researchers and clinicians must be knowledgeable and cautious when selecting visual modalities for narrative elicitation.

The most frequently used visual modalities in research include the use of *single pictures* (e.g. Eisenberg et al., 2008; McFadden & Gillam, 1996; Pearce, 2003; Swanson et al., 2005; Tönsing & Tesner, 1999), *sequenced picture cards* (e.g. Botting, 2002; Eisenberg et al., 2008; Fey et al., 2004; Ripich & Griffith, 1988; Schneider, 1996; Schneider & Dubé, 1997, 2005; Shapiro & Hudson, 1991; Spinillo & Pinto, 1994; Tönsing & Tesner, 1999), *wordless picture books* (e.g. Botting, 2002; Cain & Oakhill, 1996; Flory et al., 2006; Greenhalgh & Strong, 2001; Henshilwood & Ogilvy 1999; Norbury & Bishop, 2003; Pearce, 2003; Tager-Flusberg, 1995; Thorne, Coggins, Olson & Astley, 2007), and *videos* (e.g. Baggett, 1979; Dollaghan et al., 1990; Gazella & Stockman, 2003; Gibbons et al., 1986; Hickmann ,1982 as cited in Schneider & Dubé, 1997; Liles, 1985; Scott & Windsor, 2000; Sharp et al., 1995).

Research has shown that single pictures with story generation tasks result in poorer narratives (in terms of story grammar units, productivity and syntactic complexity measures) than single pictures with story retelling tasks (Engelbrecht, 2007). This may be because story structure is provided in the oral telling of the story, making it easier for children to tell a coherent narrative, compared to a story generation task, where children have to generate their own stories. Single picture cards also result in poorer narratives (less complex stories) compared to wordless picture books during story generations (Pearce, 2003). The reason for this is that single picture cards provide minimal narrative structure and only provide a starting point for a story.

Children are required to draw upon their own possible scripts from memory and prior experience, and generate their own story using their own internalised story structures (Pearce, 2003). On the other hand, wordless picture books reduce the cognitive load of creating a story, and provide support for narrative organisation, therefore making it easier to relate a complex narrative (Pearce, 2003, Westby, 2005). This may result in stories that are more representative of the child's understanding of story structure and ability to use complex syntax.

In contrast, Westby (2005) argued that telling stories from wordless picture books does not assess children's ability to use their own internalised story structures, because the pictures provide the story structure and story information. Children may be able to produce a story containing all the story grammar components, by only describing the events depicted in the pictures. She proposed the use of stimuli with minimal structure (e.g. single pictures) to assess children's ability to retrieve and organise story structures. However, provision of minimal stimuli, such as single pictures, may be ineffective in eliciting narratives from younger children. This is because they may not have fully developed narrative structures and therefore require assistance in terms of narrative structure, which can be given through sequenced picture cards or a wordless picture book (Pearce, 2003). On the other hand, older children with more fully developed internalised story structures, may require less structural support. Highly structured visual stimuli, such as wordless picture books, may even restrain older children from telling more complex and elaborated stories (Pearce, 2003).

Only a small number of studies have made direct comparisons between dynamic visual modalities, such as videos and static visual modalities, such as pictures. However, research has shown that videos elicited better narratives than picture books (e.g. in terms of recall of story events and of story actions) (Meringoff, 1980). Videos have also shown to provide better frameworks than still pictures for comprehension and memory of stories (Sharp et al., 1995).

To summarise, it seems that the choice of visual modalities depends on the researchers' preference, theoretical orientation and the purpose of the study. The trend over the last decade has been towards wordless picture books as the preferred visual elicitation modality of children's narratives. Wordless picture books have also been used extensively in research of communication disorders and in cross-cultural linguistic studies (Berman & Slobin, 1994; Peña et. al, 2006; Norbury & Bishop, 2003). Research focusing on story grammar analysis has especially encouraged the use of wordless picture books in assessment, because it displays the narrative structure of stories (Stein & Glenn, 1979).

2.4.4 DYNAMIC VISUAL MODALITIES

Although wordless picture books are the most widely used form of visual modality, the use of videos or animations has also been advocated. The use of these more dynamic visual modality presentations is now discussed. Previous research using dynamic visual modalities during narrative elicitation has used different terms to describe the presentation modes, for example video, animation, cartoon or movie. The term animated video will be used to represent the dynamic visual presentations below.

Advantages and disadvantages of animated videos

Animated videos have been proposed as a visual medium that is easier for children to understand than sequenced pictures or wordless picture books. Animated videos lessen the need to link pictures and infer actions from still pictures, because characters and objects can "move" from the one event to the other, and their actions are visible (Schneider & Dubé, 2005). Building a mental image/model of the story content and causal relationships associated with the verbal input, may therefore be easier in an animated video (Gazella & Stockman, 2003). Animated videos can also show story events in a more realistic way, that is familiar to children (Gazella & Stockman, 2003; Sharp et al., 1995).

Research has shown that children recall more elaborated causal sequences as well as central story actions when presented with animated videos compared to orally-presented stories, even when pictures go along with the oral stories (Bagget, 1979; Beagles-Roos & Gat, 1983; Gibbons et al., 1986; Meringoff, 1980). Animated videos also have high interest value and are effective in retaining children's interest and attention to the story (Dollaghan et al., 1990; Gazella & Stokman, 2003). Lastly, Gutierrez-Clellen and Iglesias (1992) asserted that an animated video provides a more naturalistic context for story retelling. This is because many children may watch television on a regular basis, and retelling favourite televised stories may be a more common experience than retelling stories from other sources, for example books.

From the above, it is clear that animated videos have a number of advantages compared to stories presented through static pictures or orally. However, some disadvantages of animations have also been reported. For example, Dollaghan et al. (1990) and Gazella and Stockman (2003) concluded that although animated videos are effective in retaining children's attention, the rapid pace and engaging quality of videos may compromise their effectiveness in narrative elicitation with younger children. This is because they may be too engaging and children may be distracted and overwhelmed by the presentation. The conclusion is therefore that although animated video narration can offer a highly engaging modality of narratives for children, it can also have a negative impact on younger children's story telling.

A critical evaluation of animated videos used in previous research revealed several aspects that may have compromised their validity and appropriateness as narrative assessment tools. A variety of animation methods were employed in different studies. Gazella and Stockman (2003), for instance, used puppets and props that were manually manipulated with a fishing line to act out the story. Although their animation was designed according to the principles of story grammar, they stated that the story puppets used weren't professionally prepared and may have detracted from the technical clarity of the animation. Gibbons et al. (1986) used Fischer Price dolls as characters in a story. The animation content of this study may therefore have been less realistic and natural. Dollaghan et al. (1990) used a silent black and white cartoon from the late 1940s adapted from Tomlin (1984, in Dollaghan et al., 1990). This may

seem outdated and less interesting to children than the available colourful animations seen on television today.

Many studies have used commercially available videos or animations that were not specifically designed and compiled for narrative elicitation (Gutierrez-Clellen & Iglesias, 1992; Meringoff, 1980; Lorch et al., 2007; Purcell & Liles, 1992). Other studies adapted existing commercially available videos (Merritt & Liles, 1989; Scott & Windsor, 2000; Sharp et al., 1995). Commercial videos may have high-interest value to children, because they may be more familiar with the content of the stories. However, video stories that were not designed to contain the specific structural aspects of narratives under investigation, may fail to elicit these structures in retellings. Children may fail to include certain aspects of narratives, such as settings and goals of characters, because the story presentation modality did not provide enough contextual clues about these narrative aspects. This may result in lower narrative scores and stories that are not representative of children's true narrative abilities.

The progress and availability of modern multi-media technology such as the digital capability to create dynamic visual animations, makes it feasible for clinicians to explore the uses of visual technology (such as animated videos) in assessment and intervention. With the development of electronic technology, children are also increasingly familiar with visual technology (for example watching videos on iPods or DVD's), and are more likely to be interested and familiar with more dynamic presentations.

Rideout, Foehr and Roberts (2010) indicated that American children between the ages of 8 and 18 years are using media (television, music/radio, computers, video games, print and movies) approximately 7½ hours during a typical day. In this period, approximately 4½ hours are spent watching television. Thus, television remains the dominant consumption medium or modality of young children. Meringoff (1980) argued that television is the dominant medium in which stories are presented to many children on a daily basis. Retelling a favourite television story may also be a common language activity of modern children (Gutierrez-Clellen & Iglesias, 1992).

There is therefore a need to explore the inclusion of more dynamic visual presentations, like animated videos, in narrative assessment research.

2.4.5 SUMMARY

In summary, it is evident that clinicians and researchers employ a great variety of modalities, whether it is in an audio, audio-visual or purely visual format, to elicit narratives. Although visual presentations are frequently used in narrative research, little information about the effectiveness of specific presentation modalities could be found in the existing literature. Only one study (Meringoff, 1980) was found that investigated the effect of different visual modalities (a wordless picture book and an animated video) of the same narrative on children's narrative production. However, the visual modalities used in this study were accompanied by audio-input, and the story content of the picture book and animated video was a fantasy folktale, not specifically designed for elicitation narratives in the clinical context.

The present study endeavours to address the gap in the existing research by comparing a wordless picture book and animated video of the same story, but *without audio-input,* with the aim of selecting the best *visual modality* for the elicitation of narratives in children. The content of the story in the present study - for both visual modalities - was also designed with specific narrative aspects in mind (for example goal-attempt-outcome (GAO) sequences), as well as needing to be familiar and applicable to children from different cultural, linguistic and socio-economic backgrounds.

2.5   NARRATIVE ANALYSES
2.5.1 INTRODUCTION

According to Justice et al. (2006) no "gold standard" exist that describe the most important narrative measures to be included in narrative assessment. However, research studies usually investigate narratives on two levels, micro-structure and macro-structure. Liles et al. (1995) and Liles (1987) described the micro-structural level of analyses as a more local level of language use and discourse, processing that focus on the internal linguistic structures of narratives (see also Justice et al., 2006).

Micro-structural analyses provide more fine-grained analyses of narrative components (Hoffman, 2009), and have proven to be sensitive measures to identify children with LI (Liles et al., 1995; Paul & Smith, 1993; Ripich & Griffith, 1988; Scott & Windsor, 2000).

Macro-structural analyses provide descriptions of the global organisation of narratives and generally revolve around story grammar components and the complexity of episode structure (Justice et al., 2006). On this level, the story content is organised in terms of causal and temporal relationships. These specify how statements or utterances are to be interpreted and reflect speakers' world knowledge, knowledge of story structure, and their social and emotional experiences (Liles et al., 1995). For example, a speaker's description of a story character's goal and actions to achieve the goal, are consistent with the speaker's experience within his/her own culture. The speaker's own experiences form a schema for interpretation of the story content and interactions (Liles et al., 1995).

Macro-structural analyses generally provide descriptions of the global organisations of narratives, but do not include the different linguistic structures that speakers can use in creating a coherent narrative. Micro-structural measures, such as number of subordinate clauses per T-unit and number of grammatical T-units, are more effective at identifying language impairments and describing children's linguistic competence (Liles et al., 1995; Ripich & Griffith, 1988). Narrative analyses of both macro-structure and micro-structure levels are therefore needed to obtain holistic and valid descriptions of the child's narrative production (Justice et al., 2006).

2.5.2   MICRO-STRUCTURAL NARRATIVE ANALYSES

Narrative micro-structural analyses usually comprise measures of productivity, linguistic complexity and lexical diversity. Productivity refers to the length of or amount of language output in a communication sample, given a certain context or task (Justice et al., 2006; Scott & Windsor, 2000). Productivity often includes measures of total number of words (TNW) and utterances or T-units (Justice et al., 2006; Scott & Windsor, 2000). The TNW increases with age and has been used in narrative studies to distinguish NDL children from children with LI (Liles et al., 1995; Scott &

Windsor, 2000). T-unit analysis is a widely used means of classifying narrative utterances. A T-unit can be defined as a main clause and its accompanying constituents, including clauses and phrases (Hunt, 1970 as cited in Vorster, 1980a). The total number of T-units gives an indication of narrative output or story length, and has also been shown to increase with age (Justice et al., 2006).

In analyses of school-aged children's narrative samples, mean length of T-unit rather than mean length of utterance (MLU), has been the preferred measure of syntactic complexity. Mean length of T-units is a sensitive language measure for children older than 5 years, because it reflects advanced syntactic structures such as phrasal imbedding and subordination (Owens, 2004). An increase in mean length of T-unit indicates a higher level of syntactic complexity, because additions to clauses and phrases increase the number of words in the sentence (Scott & Windsor, 2000). Other linguistic complexity measures often included in narrative micro-structural analyses, are clauses per T-unit (Kaderavek & Sulzby, 2000; Scott & Windsor, 2000; Nippold et al., 2005) and conjunctions (ordinate, subordinate or cohesive) (Justice et al., 2006; Liles, 1987; McFadden & Gillam, 1996; Miranda, McCabe, & Bliss, 1998).

Lexical diversity in narratives is typically measured by the number of different words (NDW) and Type-token-ratio (TTR). NDW reflects the differences in vocabulary use (Klee, 1992), and has been shown to increase with age (Miller, 1991 as cited in Klee, 1992). TTR is the ratio of the number of different words in a language sample to the total number of words used in the sample, and provides a description of a child's lexical proficiency (Watkins, Kelly, Harbers & Hollis, 1995). It is calculated by dividing the total number of different words by the total number of words in a language sample.

However, the TTR can be influenced by methodological issues such as the size of the language sample, and lower TTRs in bigger samples may reflect repetition of the same words. NDW may be a better indicator of a child's semantic skills and lexical diversity than TTR and for distinguishing children with LI from children with NDL (Klee, 1992; Watkins et al., 1995). NDW was therefore used to measure lexical diversity in the narratives of participants in the present study.

2.5.3   MACRO-STRUCTURAL NARRATIVE ANALYSES

There are several approaches to macro-structural analyses that have been developed and used in research and clinical practice. The main approaches and forms of narrative macro-structural analyses are now discussed.

High-point analyses (Labov, 1972)

High-point analysis was used by Labov (1972) and later by Peterson and McCabe (1983) to describe the overall structure of a child's narrative, where the most significant point of a narrative - the high point - is revealed in terms of the event's meaning for the narrator. On this view of narrative analysis, the functions of narratives are twofold: relating sequential facts of events, and sharing the event's value as a personal experience (Allen et al., 1994). Labov (1972) and Peterson & McCabe (1983) identified a developmental framework comprising different structural categories in children's narratives: one-event narrative, two-event narrative, miscellaneous narrative, leapfrog narrative, chronological narrative, end-at-high-point narrative and a classic narrative (see McCabe & Rollins (1994) for examples of each structural category).

According to this framework, until 3 years 6 months, children only combine one to two events in their narratives. By 4 years of age, children produce so-called leapfrog narratives where events are presented in random order. Some events may be omitted and have to be inferred by the listener. After age 5, children's abilities to relate events become more sophisticated and their narratives build up to a climatic event at the end, the so-called end-at-high-point narrative. Children at 6 years and older produce classic narratives, that is, narratives containing sequenced events, a high point and a resolution (McCabe & Rollins, 1994). According to McCabe et al. (2008), high-point analysis is more appropriate for the analysis of personal narratives than fictional narratives of children and adolescents.

Narrative levels (Applebee, 1978)

Applebee (1978) described narratives as being related to a child's development of concepts, and proposed a narrative level analysis to describe the developmental patterns displayed in children's narratives. Children must have concept knowledge of

the temporal and cause-effect relationships, as well as theory of mind (the ability to attribute mental states to oneself and others as well as knowing that others can feel and think differently than we do), in order to tell a good story (Stadler & Ward, 2005). Applebee (1978) proposed six developmental levels leading to mature narratives: heaps, sequences, primitive temporal narrative, unfocused temporal chains, focused temporal or causal chains and narratives.

Heaps consist of unrelated statements about the presented story stimuli. *Sequences* are characterised by statements of events linked through similar attributes or events, that create a centre for the story. A *primitive narrative* is also organised around a central situation or topic, but complimentary attributes or events are also described. The *unfocused chain* level is the first level of chaining. On this level a series of temporally related events occur, leading directly from one another. Characters, settings or actions can shift between events and there is no centre in the story. On the fifth level, the *focused chain*, there is a story centre and the story usually revolves around a main character that goes through a series of temporally related events. The links between story events are concrete and perceptual in the unfocused chain and focused chain level. The *narrative* level consists of temporally and causally related events around a central topic, that move towards a climax and an ending.

These levels are, unlike the story grammar structures, not goal-based. The levels build on the critical elements of *centering* (story topic) and *chaining* (sequence of events), and are concerned with the structural relationships of the narrative parts (Owens, 2004). The developmental levels can overlap and children may be observed telling stories using more than one of the developmental levels at any point. However, these levels are based on patterns observed in typically developing 2 to 5 year old children, and are thought to be most appropriate for analysis of stories of 2 to 6 year old children (Stadler & Ward, 2005), or children with limited verbal abilities.

Story grammar analysis (Stein and Glenn, 1979)
Story grammar analysis developed by Stein and Glenn (1979) is based on the concept of a story *schema* that provides a cognitive-based framework or schema for formulation and comprehension of stories (Stein & Glenn, 1979; Merritt & Liles, 1987). The schemas used during comprehension and production of connected text,

like narratives, differ from schemas used during processing of single sentences, in that prediction of which story events will be recalled, omitted or transformed cannot be made only on knowledge of single words or sentences (Stein & Glenn, 1979). Therefore, a schema defines the underlying structure to comprehend information and relations of story units (Stein & Glenn, 1979). Barlett (1932 as cited in Stein & Glenn, 1979) was one of the first researchers to define the types of mental structures or schemas used during encoding and retrieval of stories.

According to Barlett, a schema proposes an active organisation of reactions and experiences about the past. Mandler (1982) proposed that a schema can be used as a retrieval mechanism in the form of a temporally guided search plan, or as a reconstructive search plan to fill the gaps in memory during formulation and comprehension of stories. Thus, schemas provide structure to narratives, and serve as a type of framework to organise narratives (Naremore, 1997). If a child has an internalised "skeleton" or mental schema, it enables him or her to process and generate stories with less dependence on external cues (Wallach, 2008).

Stein and Glenn's (1979) model of story grammar structure is the most popular form of analysis of fictional narratives. According to Stein and Glenn, story grammar is characterised by a formal set of rules that describe stories as being joined in predictable ways, and comprises of patterns of causally and temporally related information in stories (see also Merritt & Liles, 1989). Stein and Glenn's (1979) model has mainly been used to describe the stories of 6 to 10 year old children. This model divided story grammar into seven major components arranged in a particular sequence: *setting* (introduction of characters and their actions as well as a description of the physical and/or temporal context), *initiating event* (events that cause the main character to react in a certain way), *internal responses* (description of character's internal emotional and cognitive responses, or intentions to the initiating event), *internal plan* (the character's strategies to attain the goal), *attempt* (the character's goal-directed action to achieve the goal), *direct consequence* (description of the success or failure of attempts to achieve the goal), and *reaction* (character's emotional responses, thoughts or actions in response to the outcome of events).

These seven story components, together constitute a complete episode. According to this model, a complete episode has to contain a character's purpose or goal (initiating event or internal response), goal-oriented action (attempt) and a direct consequence (outcome) (Peterson & McCabe, 1983). Inclusion of the components increases with age, and only at approximately 9 years, do typical developing children produce all the primary components of story grammar (Bernstein & Tiegerman-Faber, 2002; Owens, 2004; Merritt & Liles, 1987). However, the inclusion of internal responses, internal plans and reactions, which denote the story characters' purpose or goal, are rarely recalled before the age of 9 (Stein & Glenn, 1979), and generally children tend to omit these components in their narratives (Merritt & Liles, 1987, 1989; Ripich & Griffith, 1988).

Glenn and Stein (1980 as cited in Owens, 2004) proposed a developmental sequence for the acquisition of story grammar structures, and described seven developmental structural patterns: descriptive sequence, action sequence, reaction sequence, abbreviated episode, complete episode, complex episode, interactive episode. A *descriptive sequence* contains descriptions of characters, habitual actions and their surroundings. There are no causal or temporal relationships and it usually consists only of setting statements. An *action sequence* contains a chronological/temporal order of actions with no causal relationships. It consists of a setting and attempts. A *reaction sequence* consists of a sequence of events in which certain changes cause other changes, but there is no goal directed behaviour. It consists of a setting, initiating event and attempts. An *abbreviated episode* includes an implicit or explicit goal and usually contains a setting statement and consequences or internal response and consequence. In an abbreviated episode, the character's behaviour is goal directed, but not planned beforehand. A *complete episode* contains descriptions of goal directed behaviour and consequences. It contains an initiating event, internal response and an attempt. A *complex episode* is an elaboration of a complete episode or includes several episodes. An *interactive episode* includes two characters with different goals and attempts, that influence each other's goals and attempts.

The structural complexity patterns of narratives has been shown to increase with age (Peterson & McCabe, 1983) and children's descriptions of narrative events gradually shift from temporal to causal descriptions. By 5 years of age, children demonstrate more knowledge of narrative structure (Roth & Spekman, 1986), and can produce some narratives with episodic structure, instead of only sequences. However, children only develop full competence in episodic structures during their school years (Berman & Slobin, 1994).

Story grammar analysis is perhaps the best known macro-structural narrative analysis, but has been criticised in a number of studies for its lack of sensitivity to differentiate typically developing children from children with language impairments (Hewitt & Duchan, 1995; Liles et al., 1995; Merritt & Liles, 1987, 1989; Ripich & Griffith, 1988; Roth & Spekman, 1986), and not being very suitable for analysing personal narratives (Allen et al., 1994; Peterson & McCabe, 1983). Story grammar analysis can also be very time consuming when large numbers of children are assessed.

Causal network model (e.g. Trabasso & Sperry, 1985)
The causal network model is based on the story grammar model (Stein & Glenn, 1979) and describes the different kinds of story events and the causal relations between events (e.g. Trabasso & Sperry, 1985; Trabasso & van den Broek, 1985; Trabasso et al., 1989). According to the causal network model, the causal relations between story elements are deemed to be the most important features of coherent narratives in adults and children. This model is based on four properties, namely causal chains, causal connections, categorisation and hierarchical episode structure (van den Broek et al., 1996). These four properties are now discussed.

Firstly, events linked by causes or antecedents and consequences from the beginning to the end of a story are known as causal chains (Trabasso & Sperry, 1985). Events that are not linked by causes or consequences are not part of the causal chain and are known as dead ends (Hayward, Gillam & Lien, 2007). Events in the causal chain are central to the story line, whereas dead ends are not (van den Broek et al., 1996). Research has shown that causal chains are given higher importance ratings than non-causal chains and are better recalled by adults and children (Trabasso & van den Broek, 1985; Omanson, 1982). Secondly, the causal connections in a narrative refer to

the amount of direct causal connections events have to other events. Narratives generally contain both events with more causal connections to other events, and events with fewer connections to other events (Hayward et al., 2007). Events with many causal relations are significant contributors to the overall coherence of a narrative (van den Broek et al., 1996). Adults and children recall events with many causal connections better than events with fewer causal connections (Hayward et al., 2007; Trabasso & Sperry, 1985; van den Broek, 1989; van den Broek et al., 1996).

Thirdly, the category labels of the causal network model are based on the story grammar theory (Stein & Glenn, 1979). A story in its simplest form contains story grammar components, such as a setting, initiating event, reaction, goal, actions, outcome and ending (van den Broek et al., 1996). First the setting describes the circumstances of the story, introduces the story's characters and also sets up the main goal of a central character. An initiating event follows and is usually an obstacle or event. The initiating event causes a reaction of the main character, which leads the character to establish a goal. Actions follow the goal and eventually lead to a successful or unsuccessful outcome of the goal. The story is then concluded by an ending linked to the outcome. The fourth property of the causal network is a hierarchical episode structure, where events are grouped in an episode that usually revolves around a goal. Episodes are also linked with each other in a hierarchical manner, where one episode can facilitate the completion of another episode.

Flory et al. (2006) proposed a simple outline of story components, based on the story grammar theory (Stein & Glenn, 1979) and causal network model (e.g. Trabasso & Sperry, 1985; Trabasso & van den Broek, 1985; Trabasso et al., 1989). Flory et al. (2006) proposed that stories contain an initiating event (containing a character's goal/s), attempts and outcomes, known as goal-attempt-outcome (GAO) sequences. These GAO sequences are based on a shared feature of the story grammar theory and network model, which is the focus on characters' goals and motivations in a story (Renz, Lorch, Milich, Lemberger, Bodner & Welsh, 2003). The story grammar model regards the elements (goals, attempts and outcomes) as the most important elements in a story, and states that each episode in a story revolves around a goal. The network model on the other hand regards the number of GAO sequences and the causal relationships between the elements as important aspects of a coherent and cohesive

narrative. The network model proposes that a given goal may cause a number of event sequences, and that goals are most likely to have the highest number of causal connections to other story events (Flory et al., 2006; Freer, 2008; Renz et al., 2003).

Analysis of GAO sequences in narratives captures the causal connections between goals, attempts and outcomes of a story. These causal connections between the elements in GAO sequences have been described as the "glue" that hold a narrative together (Trabasso & Nickels, 1992; Trabasso & Stein, 1997). GAO sequences also represent the essential elements of goal structure of a story (Flory et al., 2006) and the presence of GAO sequences in narratives is central to greater causal relation between story events (Stein & Glenn, 1979). Children need to recognise the goal structure of a story, that is the GAO sequences, in order to create a coherent and organised story (Lorch et al., 2007; Trabasso et al., 1992). Research has also shown that children's story recall increases according to the number and importance of causal connections (GAO sequences) in a story (Hayward et al., 2007; Trabasso & Sperry, 1985; van den Broek et al., 1996).

The development of GAO sequences in children's narratives has also been investigated, consistent findings exist, and developmental changes in the use of GAO sequences have been identified. According to Trabrasso and Nickels (1992), the critical age period of development of comprehension of causal structure and goal plans is between the ages of 3 and 9 years. Children aged 3 to 4 years primarily identify the content of the pictures of the story, without any causal relations (Renz et al., 2003). Children progressively move from identification and description of events, and show an increase in their GAO sequence presentation of events. By the age of 5 years, children include more GAO sequences, although non-GAO sequences may also occur (Trabrasso & Nickels, 1992). By 9 years of age, children tend to include the same frequency of GAO sequences as adults (Trabrasso & Nickels, 1992).

Over the past 10 years, the focus of analysing children's stories has changed to a more goal-based causal organisation analysis, based on the theories of the story grammar model (Stein & Glenn, 1979) and the causal network model (Trabasso & van den Broek, 1985). During story retelling tasks, children must comprehend and organise the story information before they can retell it in a coherent way. Children must have

knowledge of the goals or plans of the characters that cause other events, attempts or outcomes in the story to tell a coherent sequence of events (Lorch et al. 2007). Berman and Slobin (1994) named it the "plot" of a narrative.

The current study modified and simplified the model of Flory et al. (2006), based on the story grammar theory (Stein & Glenn, 1979) and causal network model. A complex goal-directed story was written, containing a number of GAO sequences. A wordless picture book, and an animated video were designed to portray the specific GAO sequences of the story. It was hypothesised that children would adequately recall GAO sequences and produce coherent goal directed narratives, when prompted with pictures or an animated video of a complex goal-directed story containing a number of GAO sequences.

2.5.4   DYNAMIC ASSESSMENT OF NARRATIVES

Pressley (2002 as cited in Lorch et al., 2007) stated that daily instruction of elementary school-age children, focuses more on helping children gain factual information from stories, and often ignores the importance of how story events are related to one another. Lorch et al. (2007) proposed the use of instruction that emphasises the causal relations among events, in order to help children organise the structure of stories and assist in building more effective representations to guide their understanding and recall of the stories. One approach might be to systematically ask questions of *why* events occur, to draw their attention to the causal relations in the stories (Lorch et al., 2007). This procedure may help to facilitate the child's understanding of the underlying coherence of the story, and the identification and recalling of the causal relations between the story events.

In previous studies, some researchers have included comprehension and informational questions during story retelling tasks (e.g. Culatta et al., 1983; Gazella & Stockman, 2003; Liles, 1985, 1987; Sharp et al., 1995), but these questions were mostly asked after a retelling task, and the child was not expected to retell the story again after answering the questions. It was hypothesised that a set of comprehension questions combined with specific questions about the causal relations in the story, will aid children in retelling a coherent goal-directed narrative. These question-answer

strategies are a way to assist children in producing stories that are representative of their true narrative abilities. Recent research in language assessment as well as narrative assessment has moved towards assessment that is more "dynamic", to determine how children perform with adult facilitation - hence the term dynamic assessment (DA) (Gutierrez-Clellen & Quinn, 1993).

Language assessments (including the assessment of narratives) have traditionally focused on the identification of language impairments based on a child's current level of performance in a given area (Gutierrez-Clellen & Peña, 2001). However, the clinician must keep in mind that the child being assessed may come from a different cultural background, and may have had different language experiences. The child may, for instance, have had limited experience with storybooks and the retelling of stories. The difficulty with a static once-off assessment, is that children may underperform in a formal test due to language or cultural differences, fatigue, unfamiliarity with the task, or other factors that may be misinterpreted as language impairments (Peña et al., 2006). An assessment tool that distinguishes children with language impairments, and children with language differences is essential in making an accurate diagnosis of a child's language abilities. DA has been proposed as an alternative method to traditional language assessments, and has been used to assess children's abilities to respond to a learning experience, as well identifying language differences and language disorders (Gillam et al., 1999; Gutierrez-Clellen & Peña, 2001; Gutierrez-Clellen et al., 1995).

Several studies have explored the use of DA in children's language studies. For example, a study by Gutierrez-Clellen and Peña (2001) investigated the effect of DA on two bilingual Latin American (Spanish-English) preschool children's vocabulary knowledge. The Expressive One-Word Picture Vocabulary Test-Revised (EOWPVT-R, Gardner, 1990) was used to measure their vocabulary comprehension. The results indicated that both children obtained similar scores before mediated learning experiences sessions. However, one child was judged as being highly modifiable and showed gains in the EOWPVT-R after mediation. The other child made no gains in the test scores after mediation, and was also judged as being only moderately modifiable during the mediation. This indicates that initial test scores were not effective in differentiating between children's vocabulary performances. Therefore,

the results of this study indicate that a form of DA can effectively distinguish between children with language disorders and language differences.

Peña, Iglesias and Lidz (2001) compared the pre- to post-test performance of preschool African American and Latino American children, with and without language impairment. Similar to the study of Gutierrez-Clellen and Peña (2001), the EOWPVT-R was also used as a measure of vocabulary. Children were divided into two groups, one group received mediation sessions, while the other group received no mediation sessions. The results indicated that performance of typically developing children in the mediation group improved significantly in the post-test, compared to children with language impairments and children who received no mediation. This correlates with Gutierrez-Clellen and Peña (2001), indicating that DA can effectively differentiate between language disorders and language differences.

The goal of DA is to determine if a child's performance on a task can improve when specific feedback is given (Swanson & Lussier, 2001). DA is based on Vygotsky's (1978) concept of the "zone of proximal development" (ZPD), and Feuerstein's mediated learning experience (Feuerstein, Rand & Hoffman, 1979 as cited in Kramer et al., 2009). The ZPD is the distance from the child's unassisted performance and the level of performance the child can reach if assistance or facilitation is provided by an adult. The goal of DA is to determine the size of the ZPD (Gutierrez-Clellen & Peña, 2001) and to determine the amount of change or growth in a child's performance when adult support is provided. Two children may, for example, present with the same independent performance level, but one child may require more assistance to reach a certain higher performance level than the other child. The child requiring less adult support may also demonstrate more growth or change in performance than the child who required a great deal of assistance. There are three basic approaches of DA that have been used in language assessments of children. These include, testing the limits, graduated prompting and the test-teach-retest model (Gutierrez-Clellen & Peña, 2001).

The test-teach-retest model is the most familiar approach to DA (Laing & Kamhi, 2003) and is a modern application of Vygotsky's ZPD to educational and psychological assessment (Gillam et al., 1999). This model starts with a testing phase in which the clinician determines a baseline measure of a child's performance without adult assistance. The testing phase is followed by a teaching phase, in which the clinician provides a mediated learning experience (MLE). During the MLE, the clinician teaches the principals of the task through, for example, questions, explanations or prompts. This phase also give the clinician an idea of how the child learns. During the retest phase, the clinician measures the change or modifiability of the child's performance following mediation, i.e. the outcomes of the learning process. The retest phase gives an indication of how children use their new knowledge and skills (Gutierrez-Clellen et al., 1995).

The application of DA on children's narratives has also been investigated. Peña et al. (2006) states that DA of narratives can be a less culturally and experientially biased assessment procedure than standardised tests, since it can provide information of a child's cognitive processes, emerging skills and learning potential. Narrative assessment is also found to be useful for children from diverse cultural and linguistic backgrounds, because most children are familiar with some form of narrative (Kramer et al., 2009; Peña et al., 2006).

Peña et al. (2006) investigated the effect of DA on children with LI and typically developing children. They assessed children's narratives in response to wordless picture books, and included several micro- and macro-structural measures. A test-teach-retest approach of DA was followed, and participants attended short mediation sessions between story tellings. The results indicated that typically developing children made greater pre- to post-test gains than children with LI. They were also judged as being more modifiable during mediation than children with LI. Another study by Kramer et al. (2009) also investigated the effect of DA on children's narratives, and found similar results to those of Peña et al. (2006). These studies indicate that the application of DA in narrative assessment can be used effectively to distinguish children with LI from typically developing children.

2.5.5   SUMMARY

In summary, a variety of micro- and macro-structural measures can be used during narrative analyses, and the type of analysis usually depends on the researcher's focus. In relation to the narrative analysis measures being assessed, the goal of DA in narrative assessment is to bring about change or improvement in a child's narrative performance (e.g. in terms of micro- and macro-structural measures) and to determine the extent to which a child's narrative performance can be enhanced (Gutierrez-Clellen et al., 1995).

2.6   THE PRESENT STUDY

Two main questions guided this study. First, *"What is the effect of two different visual elicitation modalities, a wordless picture book and an animated video, on the narrative skills of Grade 3 children with typical language development?"*

The reason for the selection of the specific elicitation modalities, the way in which they were represented, as well as the chosen population, will be briefly described.

From the results of previous studies, the conclusion can be made that audio-only presentations of narratives may result in children trying to memorise and repeat the model narrative, and that audio-visual presentations may distract or place higher cognitive processing demands on children. It was hypothesised that visual representation of a narrative structure through a wordless picture book (without audio input) or silent video animation can reduce the cognitive load of auditory processing, and thus assist children to produce more complex narratives. It can also allow for the assessment of a child's ability to generate his/her own story without audio distractions, and reveal how the child structures a story without verbal linguistic structure offered by the clinician.

In this study, a wordless picture book and an animated video of the *same* story were selected as elicitation modalities. A wordless picture book was selected as it seems to be the preferred choice of visual modality in recent research of narratives (e.g. Norbury & Bishop, 2003). An animated video was selected as more dynamic visual

presentations, like animations, have shown to elicit specific story details, such as actions, better than still pictures (see e.g. Meringoff, 1980).

The wordless picture book and the animated video, both provided the story structure and story information (Westby, 2005), but participants were still required to use their own words to tell the story, and could still be creative in their storytelling. Children were required to tell their stories without looking at the pictures or animated video. This placed a higher demand on memory of the story, but also allowed the child to use his/her own internal story organisation to tell the story. Thus, the child could not merely provide descriptions for each picture in the story. The aim was to provide a degree of structure, but to still control the child's production, enabling the researcher to interpret and compare the child's narrative production with others. After story telling to the researcher and the mediated learning experience provided by the researcher, the child was expected to tell the story to a naive listener.

From the above literature, there exists a need to develop a tailor-made wordless picture book and animated video suitable for the South African population of children which is specifically designed to elicit certain aspects of narratives. Therefore, a narrative with specific aspects in mind, such as GAO sequences, was written by the researcher, and the visual modalities were specifically designed to complement the written content. The illustrations and the story content were designed to be appropriate for children in the South African context (see Appendix C for pictorial content of the story and Appendix A for information about the GAO sequences of the story). The pictorial content portrayed characters, objects and scenery that were assumed to be typical of the South African context. The events in the story were also assumed to be common events, that most South African children would be familiar with, for example, playing outside with a ball or going to the doctor.

The second main research question originates from the determination of the feasibility of DA of narratives on the South African population children. *Is there an improvement in participants' narrative skills as a result of mediated learning experiences in the form of focused questioning?"*

Previous research has indicated that DA of narratives is effective in distinguishing typical developing children from children with LI (e.g. Kramer et al., 2009; Peña et al., 2006). Methods used during mediated learning experiences of DA, have also shown to increase children's narrative performance after mediation (Peña et al., 2006). However, different strategies of MLE have been applied in the DA of narratives, and it seems that the strategies used depend on the researcher's goal of DA. For example, distinguishing children with cultural or language differences or language impairments, or to determine children's optimal performance level. For this study, the test-teach-retest model was used as DA approach. The goal of this study was not to distinguish between children's language abilities, but to assist children to perform at their optimum level for narrative production. For the purposes of the MLE of the current study, the researcher compiled a question-answer strategy based on the approach described by Lorch et al. (2007), to increase the child's understanding of the underlying coherence of the story, and the identification and recalling of the causal relations among story events.

3. METHODOLOGY

This chapter presents the research questions, aims, research design, participant selection, data collection and analyses.

3.1 RESEARCH QUESTIONS

Two main research questions were investigated: *"What is the effect of two different visual elicitation modalities, a wordless picture book and an animated video, on the narrative skills of Grade 3 children with typical language development?"* and *"Is there an improvement in participants' narrative skills as a result of mediated learning experiences in the form of focused questioning?"*

3.2 MAIN AIMS OF THE STUDY

The broad aims of the study were:

(1) to investigate the effect of two visual elicitation modalities, namely: storytelling with i) a wordless picture book, and ii) an animated video on the narrative skills of mainstream Afrikaans Grade 3 learners, with typical language development.

(2) to determine the effect of dynamic assessment in the form of mediated learning experiences (MLE) on participants' micro- and macro-structural narrative skills.

Sub aims of the study were:

Comparison of the narratives elicited by the two visual elicitation modalities in terms of:

- Micro-structure
    a) Productivity (total number of T-units and total number of words (TNW)).
    b) Syntactic complexity (mean length of the T-unit (MLT)).
    c) Lexical diversity (total number of different words (NDW)).
- Macro-structure
    d) Goal-attempt-outcome (GAO) sequences in the narratives.

3.3 ASSUMPTIONS

The *first assumption* was that the animated video presentation would result in better narratives (in terms of micro- and macro-structural skills) than the wordless picture book. The motivation for this assumption is because research has shown that more dynamic visual presentations, like animations, can result in better recall of story events and story actions, and are more engaging than still pictures or oral tellings (Gazella & Stockman, 2003; Meringoff, 1980).

The *second assumption* was that the narratives, after MLE in the form of focused questioning, would result in improved narrative skills. Research has shown that dynamic assessments of narratives, which include MLE, are effective to increase children's narrative performance after mediation (e.g. Kramer et al., 2009; Peña et al., 2006).

3.4 STUDY DESIGN

A cross-sectional descriptive design was used. Participants were mainstream children with no history of speech-language impairments. Therefore, it was assumed that they would display normal narrative skills. This study did not aim to provide in-depth analyses of participants' narratives, but to compare their production of certain aspects of narrative micro- and macro-structure variables after exposure to the two visual modalities, and as a result of dynamic assessment. Participants were compared with themselves to examine the differences between their narratives. Both quantitative and qualitative data analyses were used in the study.

3.5 PARTICIPANTS

Twenty nine Afrikaans-speaking Grade 3 children were selected from a local Afrikaans mainstream primary school in the Western Cape.

3.5.1 *Selection Criteria*
Participants had to meet the following selection criteria to take part in the study:

3.5.1.1 *Inclusion Criteria*

Language: Only Afrikaans home language speakers from Afrikaans medium-classes were selected to control for the effects of multilingualism on language development, and to make comparisons between participants possible.

Speech-language development: Only participants from a mainstream school with no history of speech or language impairment were selected. Vocabulary skills were assessed by means of the Afrikaanse Reseptiewe Woordeskattoets (ARW) (Buitendag, 1994), a formal standardised test. Participants' standard scores ranged from 77 to 177. In an attempt to ensure that the study population resembled the general population, the researcher did not exclude children on the basis of receptive vocabulary standard scores below 85. A questionnaire was used to determine if participants had any history of speech or language problems, had received speech-language therapy and/or had a history of otitis media or hearing problems (see Appendix J). See table 3.1 for a description of participants' ARW scores.

Age: Participants had to be between 8 years and 9 years 4 months to make comparisons of developmental language measures possible. Literature states that children produce best narratives at age 9 years (Peterson & McCabe, 1983) and that their narratives at this age are well developed and generally include all the elements of story grammar (Owens, 2004).

Socio-economic status: Only Grade 3 learners from the same mainstream school in a higher socio-economic area were selected, to control for socio-economic status. The Western Cape Education Department (WCED) funds schools according to poverty rankings in their surrounding communities, based on the National Norms and Standards for School Funding (NNSF). Schools are assigned a poverty quintile according to three poverty indicators: income levels, unemployment rates and educational levels of the community (WCED, 2006). Quintile 1 schools are usually situated in poverty-stricken areas and quintile 5 schools in very affluent areas. Participants in this study attended a school classified as a quintile 4 school, in other words, a school in a higher socio-economic status community (WCED, 2010). Hoff & Tian (2005) found that socio-economic status has an influence on language development and consequently on narrative development.

Hearing: Participants had to have normal hearing, i.e. they had to pass pure tone screening at 20 dB levels at 500, 100, 2000, 4000 Hz (Katz, 1994). Research has shown that sensory disabilities, like hearing loss, can lead to language delays (Stach, 1998).

Consent: Only the participants whose parents/caregivers and themselves gave consent were included in the study. The parents were given a consent form that stated what the study implied and they were informed that participation was voluntary (see Appendix J).

3.5.1.2 *Exclusion Criteria*

All children who failed the hearing screening test were excluded from the study and referred for hearing tests and medical treatment where necessary. Children older than 9.11 years as well as children who repeated Grade 3 were excluded. Participants who did not give consent or whose parents/caregivers did not give consent were also excluded.

3.5.2   *Selection Procedures*

Formal written consent was obtained from the WCED (Western Cape Educational Department), school principal, parents and participants prior to the study (see Appendix J for examples of consent forms). Participation was voluntary and participants could withdraw at any stage. The participants, teachers and parents were assured that confidentiality would be maintained and their identities would be protected.

3.6   MATERIALS AND INSTRUMENTATION

The material and instruments used included the following:

3.6.1   *A standardised language test:*

The Afrikaanse Reseptiewe Woordeskattoets (ARW) (Buitendag, 1994). This test is a formal standardised test to measure vocabulary and receptive language skills in Afrikaans speaking populations.

3.6.2 Audiometer:

GSI 38 screening audiometer was used by the researcher and research assistant during the pure tone hearing screening.

3.6.3 Camera:

A CANON MV 790 video camera was used to record the children's storytelling.

3.6.4 Computer:

A portable laptop computer (HP Pavilion dv5000) was used to present the animation presentation of the story, as well as a slide show of the pictures of the story, during the focused questioning task.

3.6.5 DVD's:

The video recordings were stored on DVDs to make the transcriptions of the narratives easier and to increase the reliability of the analyses.

3.6.6 Wordless picture book:

An original story featuring several characters was written by the researcher and illustrated by a professional illustrator (see Appendix C for pictorial content). The story portrayed a series of problem-based goal-attempt-outcome (GAO) sequences. This format was chosen because young children produce more complete and complex narratives in response to problem-based picture sequences (Shapiro & Hudson, 1991). Stories containing several GAO sequences are also better recalled than stories with few GAO sequences (Hayward et al., 2007; Trabasso & Sperry, 1985; van den Broek et al., 1996). Furthermore, stories with many GAO sequences are more organised and cohesive (Flory et al., 2006). The story events in the wordless picture book in this study portrayed five possible goal-attempt-outcome sequences. The picture book contained 15 colour pictures compiled by a professional illustrator, in consultation with the researcher. The layout and printing were done by a professional company.

3.6.7 Animated video:

An animated video based on the same content as the wordless picture book was compiled and produced by a professional graphic designer. The duration of the video was approximately 2 minutes. The video was soundless, in order to resemble the

wordless picture book presentation. The animated video used the same picture sequences as the wordless picture book, but modifications were made, for example, editing techniques such as moving of characters and objects, zooming in on important aspects of the storyline and fading events. These techniques contributed to the different temporal and spatial dimensions of the animated video, which differentiated it from the picture book.

3.6.8 *Slideshow of pictures of the animated video:*

A slideshow containing the same pictures as the wordless picture was used during the mediated learning experiences component of the animated video presentation.

3.7 DATA COLLECTION PROCEDURES

3.7.1. *Group assignment*

The participants were randomly assigned to one of two groups, group 1 (book first - animation last) and group 2 (animation first - book last). Group 1 was exposed to the wordless picture book presentation in the first exposure session and to the animated video presentation in the second exposure session. Group 2 was exposed to the animated video presentation in the first exposure session and to the wordless picture book presentation in the second exposure session. Group 1 consisted of 13 children (9 girls and 4 boys) and group 2 consisted of 16 children (11 girls and 5 boys); a total sample of 29 participants. Group 2 comprised of three more participants than group 1, due to exclusion of participants who were absent on the specific data collection days.

Table 3.1 provides a summary of the participants' chronological ages, ARW raw scores, age equivalents and standard scores.

Table 3.1: *Participants' chronological ages, and ARW raw scores, language age equivalent scores and standard scores*

Participant	Chronological Age (years – months)	Raw Score	ARW Language age equivalent (years – months)	Standard Score
Group 1:				
1	9 – 0	123	8 – 6	92
2	8 – 7	122	8 – 4	102
3	9 – 2	148	10 – 6	117
4	8 – 6	130	9 – 0	105
5	8 – 10	135	9 – 3	106
6	8 – 7	108	7 – 6	100
7	8 – 5	134	9 – 3	111
8	9 – 0	113	7 – 9	84
9	9 – 4	131	9 – 0	97
10	8 – 10	121	8 – 3	95
11	9 – 3	148	10 – 6	114
12	8 – 9	111	7 – 8	85
13	9 – 4	128	8 – 10	94
Group 2:				
14	8 – 5	98	7 – 0	80
15	8 – 8	124	8 – 7	100
16	9 – 2	130	9 – 0	99
17	8 – 9	105	7 – 5	80
18	8 – 10	127	8 – 9	99
19	9 – 3	111	7 – 8	79
20	8 – 11	134	9 – 3	106
21	9 – 4	143	9 – 10	109
22	9 – 2	129	8 – 11	98
23	8 – 6	98	7 – 0	77
24	8 – 8	124	8 – 7	100
25	8 – 8	111	7 – 8	89
26	8 – 6	105	8 – 7	83
27	8 – 10	136	9 – 4	107
28	8 – 11	102	7 – 3	77
29	8 – 6	120	8 – 3	97
Average	**8 – 6**	**122**	**8 – 5**	**96**
Range	**8 – 5 → 9 – 4**	**98 → 148**	**7 – 0 → 10 – 6**	**77 → 117**

3.7.2. Assessment

Each participant was exposed to the same test conditions to increase the validity and reliability of the assessment procedures. During the first two screening sessions, pure tone hearing screening and the ARW were administered to assess participants' hearing and receptive language skills. Narratives were collected by the researcher and another qualified speech-language therapist, approximately 6 weeks after the participants' initial screening.

Assessment took place over a period of four weeks. Each child was assessed individually in a quiet room at the school. All the participants were presented with the same animated video and wordless picture book; group 1 - first with the book, and group 2 - first with the animated video. In an attempt to control and minimise the effects of learning and memory, there was a time lapse of 2 weeks between participants' first and second exposures to the different visual modalities. Each session was videotaped on a CANON MV 790 video camera. Table 3.2 provides a summary of the assessment procedures.

Table 3.2: *Summary of the assessment procedures*

Screening sessions 1 & 2	Time lapse of 6 weeks	Week 1	Week 2	Week 3	Week 4
		First exposure session	First exposure session	Second exposure session	Second exposure session
		Group 1	Group 2	Group 1	Group 2
Pure tone hearing screening and standardised language test		Wordless picture book	Animated video	Animated video	Wordless picture book

3.7.3. *Story presentation and procedures:*

Wordless picture book:

1. First narrative production: Each participant was asked to preview the wordless picture book prior to telling the story. The researcher sat next to the child while the child paged through the book. Previewing conditions have been shown to result in better comprehension of the story events (Pearce, 2003) and to produce more narrative components (Shapiro & Hudson, 1991). The book was then closed and the child was asked to tell the story to the researcher, without looking at the pictures in the book. During the story telling, the researcher responded with neutral responses such as "mmm", "ja", "en toe?", to prompt the child to continue the story or to gain more information. If the child stopped the story without providing a formal ending, the researcher asked the child "Het jy klaar vertel?". No further questions were asked if the child responded with "ja". After participants told the stories, the researcher asked the child to give a title for the story, as well as descriptions of the setting and the main characters of the story.

2. Mediated Learning Experience: The researcher then paged through the book with the child and asked a set of focused questions about the story (see Appendix B for questions related to each picture in the book). These questions were designed by the researcher to draw participants' attention to specific aspects of the story, such as the goals, attempts and outcomes depicted, and dialogue, emotions and thoughts of the characters. The aim of the focused questions was to prompt participants to include these aspects in their second narrative production, resulting in more organised and complete narrative than during the first narrative production.

3. Second narrative production: After the child paged through the book with the researcher and answered the questions, the naive listener entered the room. The researcher left the room and the child was asked to tell the story again to the naive listener without looking at the pictures in the book. The naive listener also used neutral responses to prompt the child's story telling or to gain more information. To control for the possible influence of the assumption of shared knowledge on retelling, researchers usually make use of a naive listener, supposedly unfamiliar with the

content, during narrative elicitation (Liles, 1985, 1993; Hadley, 1998; Gazella & Stockman, 2003; Schneider & Dubé, 2005).

Animated video presentation:

1. First narrative production: The child viewed the animated video on a portable laptop computer, while the researcher sat next to the child. The researcher closed the computer after the child viewed the animation. The child was asked to tell the story to the researcher without looking at the animated video. During the story telling, the researcher used the same neutral responses described in the wordless picture book presentation.

2. Mediated Learning Experience: After the first story telling, the child viewed a slide show of pictures of the story on the portable laptop computer, while the researcher asked the focused questions about the story as in the MLE of the wordless picture book presentation.

3. Second narrative production: After the child viewed the slide show with the researcher and answered the questions, the researcher brought the naive listener into the room. The researcher left the room and the child was then asked to tell the story again to the naive listener without looking at the pictures of the slideshow. The naive listener also used neutral responses during the child's story telling.

3.8   DATA CODING AND ANALYSES

After the narratives were collected, the researcher transcribed each participant's narrative according to a self-designed narrative analysis protocol (See Appendix A), based on the procedures used in the Toets vir Mondelinge Taalproduksie (TMT), Vorster (1980b). The participants' narratives were analysed with regard to the following micro-structural categories: Productivity (total number of words (TNW) and total number of T-units), syntactic complexity (mean length of T-units (MLT)), and lexical diversity (number of different words (NDW)). On macro-structural level, participants' GAO sequences and the number of goals, attempts and outcomes in their narratives were assessed. Appendix A provides a description of methods and scoring

of the data and Appendix E provides an example of one of the participant's narrative analyses.

3.9   ANALYSES

Quantitative, qualitative and statistical analyses were used to analyse the data. For the micro-structural measurements, mixed model repeated ANOVAs were used to analyse the cross-over design. All post hoc analyses were done using Fisher least significant differences (LSD). Goal-Attempt-outcome (GAO) sequences were analysed using generalized estimating equations (GEE) with negative binomial as underlying distribution. Further insight was gained into the GAO sequences by performing a classification tree analysis (CART). The aim of this analysis is to partition the data based on predictor variables. Each partition is characterised by a rule. Examining these rules has the potential of providing more insight into how the dependent variable is influenced by the predictor variables. Mixed models and CART were done using Statistica 9. GEE analyses were done using SPSS 18.

3.10   RELIABILITY

All the assessment measures used in this study have been used in previous studies to assess narratives and were found to be valid measures of expressive language. To establish inter-rater reliability, another speech-language therapist transcribed the data and verified the narrative analyses for six participants (20%), who were randomly selected from both groups.

The results of the inter-rater reliability procedures are shown in table 3.3. Differences in results between the researcher and the second rater were resolved through discussion, and a consensus was reached.

Table 3.3: *Inter-rater reliability for transcriptions and data coding*

Measure	Agreement
Transcriptions	99.86%
Total number of words (TNW)	99.97%
Total number of T-units	100%
Mean length of T-unit (MLT)	95.69%
Total number of different words (NDW)	99. 87%
Goal-Attempt-Outcome (GAO) sequences	99.31%

3.11 VALIDITY

All the assessment measures and instruments used in this study were considered to have relatively high construct validity. Construct validity is the mutual verification of the measuring instrument and the theory of the construct it is meant to measure (Angoff, 1988 as cited in Cumming & Berwick, 1996). The test measures and instruments (wordless picture book and animated video) have been used in previous research, and have been found to be valid measures of expressive language and narrative skills.

3.12 ETHICAL CONSIDERATIONS

- Registration of the research study was sought (see Appendix F) and the research study was approved by the Ethics Committee of Health Sciences, Stellenbosch University, prior to commencing the research (see Appendix G).
- Written consent was obtained from the Western Cape Educational Department, prior to conducting the research (see Appendix H).
- Written informed consent was obtained from the school principal (see Appendix I), parents, and a verbal assent was obtained from each child prior to the study (see Appendix J).
- All participants and their parents were informed that anonymity and confidentiality would be guaranteed, and that the rights of the participants would be protected (see Appendix J). Data for each participant were coded by number to safeguard the confidentiality of information.

- The selected participants and relevant parties were informed of all the aspects of the study. Participation was voluntary and participants were allowed to withdraw at any time.

- The study imposed, at most, minimal risks to the subjects.

- All the subjects that failed the hearing screening tests were referred for a full speech-language assessment and/or a hearing assessment.

- The results of the study were made available to colleagues and the public after it was compiled into a thesis.

- Credit was assigned to contributors to the research study.

3.13   DISSEMINATION OF RESULTS

The results were made available to the school and the Western Cape Educational Department. They were also compiled into a thesis and made available to colleagues and the public. All records will be kept for a period of 7 years, before they are destroyed.

4.   RESULTS AND DISCUSSION

4.1   INTRODUCTION

This chapter presents the results for the different variables performed in the study. The main aims were to determine the effect of two visual modalities (wordless picture book and animated video) on the narrative skills of mainstream Grade 3 learners, and to determine the effect of MLE on narrative production. The presentation and discussion of the results is structured around the questions that lead from the main research questions, namely, *"What is the effect of two different visual elicitation modalities, a wordless picture book and an animated video, on the narrative skills of Grade 3 children with typical language development?"* and *"Is there an improvement in participants' narrative skills as a result of mediated learning experiences in the form of focused questioning?"*

The analyses used in this study examined the differences between the groups, narratives and modalities, with respect to various micro-structural and macro-structural measures. Each of the different variables used during this study are defined once more to assist in interpretation of the results:

- Modality: wordless picture book presentation or animated video presentation.
- Narrative: narrative 1 (participants' narratives before the mediated learning experience) or narrative 2 (participants' narratives after the mediated learning experience).
- Group: group 1: book-animation (participants who were exposed to the wordless picture book during the first exposure session and to the animated video during the second exposure session) or group 2: animation-group (participants who were exposed to the animated video during the first exposure session, and to the wordless picture book during the second exposure session.

The main effect and interactions between each of these variables were investigated. A *main effect* indicated that only one variable resulted in significant differences between the scores of a measurement. An *interaction* between variables indicated that the

differences in the scores for one variable were influenced by another variable. Interactions were divided into *second order interactions*, where the scores for two variables were influenced by the interaction between them, and *third order interactions*, where the scores for all three of the variables were influenced by the interaction between them.

For example, if a second order modality-group interaction occurs, it can for example, indicate that the participants that obtained higher scores for the animated video modality than the wordless picture book modality, were specifically the participants in group 1 (the group that were exposed to the animated video in the second exposure session).

A 5% significance level ($p<0.05$) was used as guideline for determining significant effects of variables for bootstrap analyses. The letters (e.g. [a]) in figures denote significant differences on a 5% ($p<0.05$) level. Similar letters denote no significant difference between scores, whereas different letters indicate that significant differences occurred. For example, [a] and [b] denoted statistically significant differences, but [a] and [ad] indicate no significant difference.

Firstly, the results of the micro-structural measures are discussed. The micro-structural variables were analysed through mixed model repeated ANOVAs, to analyse the effects of the cross-over design. All post hoc analyses were done using Fisher least significant differences (LSD) tests. Secondly, the results of the macro-structural measurements are discussed. Goal-Attempt-outcome (GAO) sequences were analysed using generalised estimating equations (GEE) with negative binomial as underlying distribution. A classification tree analysis (CART) was performed to provide insight into the GAO sequences, and to partition the data based on predictor variables.

4.2   Narrative microstructure:

4.2.1   Productivity:

Productivity refers to the amount of language produced by the participants, that is, the volume of output in words or syntactic units (Justice et al., 2006). To determine the effect of the different visual modalities and dynamic assessment tasks (focused questioning) on productivity, two measures were used: total number of words (TNW) and total number of T-units. Table 4.2.1 provides a description of the TNW and total number of T-units for each participant, as well as the average scores and range of scores for each narrative.

Table 4.2.1: *Productivity: Participants' scores for total number of words (TNW) and total number of T-units for Narrative 1 (N1)*

(First narrative production before the MLE) and Narrative 2 (N2) (Second narrative production after the MLE)

	GROUP 1:					GROUP 2:					GROUP 1:					GROUP 2:			
Participant	Total number of words (TNW)				Participant	Total number of words (TNW)				Participant	Total number of T-units				Participant	Total number of T-units			
	1. Book		2. Animation			1. Animation		2. Book			1. Book		2. Animation			1. Animation		2. Book	
	N1	N2	N1	N2		N1	N2	N1	N2		N1	N2	N1	N2		N1	N2	N1	N2
1	276	421	463	462	14	165	171	154	233	1	31	54	58	54	14	17	18	14	23
2	141	244	301	310	15	171	239	229	225	2	20	30	39	38	15	20	25	26	25
3	192	201	149	187	16	181	342	240	323	3	21	21	16	21	16	22	39	29	41
4	187	205	208	218	17	133	141	161	173	4	21	24	26	26	17	16	19	18	18
5	195	240	316	469	18	122	277	300	378	5	24	25	35	46	18	14	34	32	43
6	191	430	541	523	19	167	344	301	649	6	22	48	62	58	19	21	37	34	74
7	151	167	181	191	20	188	286	299	340	7	17	20	20	23	20	18	26	24	28
8	126	182	140	128	21	241	353	313	466	8	17	22	20	17	21	25	35	33	44
9	97	151	165	187	22	140	245	222	247	9	15	20	20	24	22	17	27	27	32
10	139	193	189	259	23	95	278	264	312	10	18	24	24	34	23	11	36	29	38
11	180	343	268	289	24	164	240	183	260	11	16	30	29	33	24	22	28	20	28
12	124	187	150	180	25	84	133	145	179	12	16	27	21	25	25	13	19	20	23
13	198	192	263	240	26	194	260	218	218	13	21	21	31	23	26	23	25	25	23
					27	187	305	261	319						27	26	35	31	34
					28	146	197	159	177						28	19	24	22	23
					29	143	194	167	225						29	18	23	20	26
Ave.	169	243	256	280	Ave.	158	250	226	295	Ave.	20	28	31	32	Ave.	17	28	24	33
Range	97 - 276	151 – 430	140 – 541	128 - 523	Range	84 – 241	133 – 353	145 – 313	173 - 649	Range	15 – 31	20 – 54	16 – 62	17 – 58	Range	11 – 26	18 – 39	14 – 34	18 - 74

4.2.1.1 Total number of words:

Is there a difference in the TNW of narratives in response to the wordless picture book and animated video?

Participants' mean scores for TNW were analysed with regards to the visual modalities used in the first exposure and second exposure. The results of this comparison indicated no significant differences in the TNW between the narratives of the animated video presentation and the wordless picture book (first exposure: $F(1, 27)=0.01$, $p=0.93$, second exposure: $F(1, 27)=0.04$, $p=0.85$). Table 4.2.4 (below) provides a description of the two separate analyses for the 1st and 2nd exposures with TNW as dependent variable.

A significant modality and group interaction was found ($F(1, 27)=23.16$, $p=<0.01$) is depicted in figure 4.2.1.1. Narratives of the modality in the second exposure of each group resulted in a significantly higher TNW than narratives of the modality in the first exposure. For example, participants who were exposed to the wordless picture book in the first exposure and to the animated video in the second exposure produced a higher TNW during storytelling in the animated video modality. It can be concluded that the highest TNW will depend on which modality participants are exposed to last. This finding indicates that the second exposure, regardless of the modality, resulted in higher sores for TNW, probably as a result of memory and learning that took place during the first exposure.

Figure 4.2.1.1: *Productivity: Mean TNW scores by modality and group (letters indicate significant differences on a 5% (p<0.05) level)*

Does the MLE after narrative 1 result in higher TNW in narrative 2?

A significant third order interaction occurred between the narrative, modality and group ($F_{(1, 27)}$=5.64, p=0.02). This significant third order interaction is depicted in figure 4.2.1.2.

Narrative 2 in each modality and group produced a higher TNW, indicating that the MLE resulted in higher TNW scores in narrative 2. The difference between narrative 1 and narrative 2 was significant in each modality and group, except for the animated video modality of group 1. It can be concluded that group 2 (animation 1st - book 2nd) significantly benefited from the MLE during each modality (animated video and book), whereas group 1 (book 1st - animation 2nd) only benefited significantly from the MLE during the wordless picture book presentation.

A possible explanation for this finding is that participants in group 1 remembered the story better than participants in group 2. Therefore, they could have been more bored in the second exposure to the animated video. A plateau effect was therefore reached and the second narrative in the animated video after MLE did not result in higher TNWs. Figure 4.2.1.2 depicts the mean TNW scores by group, narrative and modality.
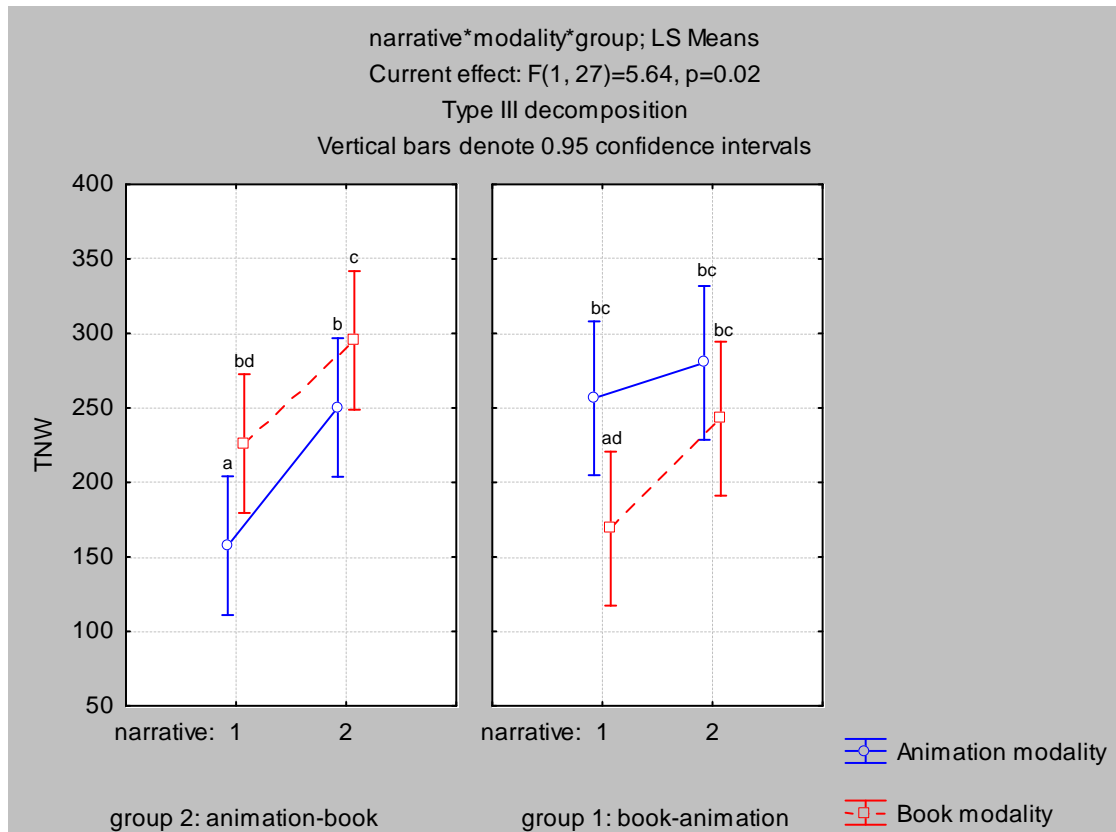
Figure 4.2.1.2: *Productivity: Mean TNW scores by group, narrative and modality*
(letters indicate significant differences on a 5% (p<0.05) level)

Summary of TNW:

The total number of words produced in narratives increases with age and is a measure of verbal productivity (Klee, 1992; Miller, 1991 as cited in Owens, 2004). No significant differences for TNW were found in the animated video and wordless picture book presentations. Narrative 2, after the MLE, resulted in significantly higher TNW in each group and modality, except in the animated video modality of group 1.

4.2.1.2 Total number of T-units:

Is there a difference in the total number of T-units of narratives in response to the wordless picture book and animated video?

The mean scores of the total number of T-units were not significantly different in the animated video and wordless picture book presentations in each exposure (first exposure: $F_{(1, 27)}=0.06$, $p=0.81$, second exposure: $F_{(1, 27)}=0.40$, $p=0.53$) (See table 4.2.4 below for description of the two separate analyses for the 1st and 2nd exposures with total number of T-units as dependent variable). A carry-over effect occurred and the mean total number of T-units (similar to the mean TNW) was significantly higher during the second exposure ($F_{(1, 27)}=24.51$, $p=<0.01$). This significant modality-group interaction is depicted in figure 4.2.1.3.
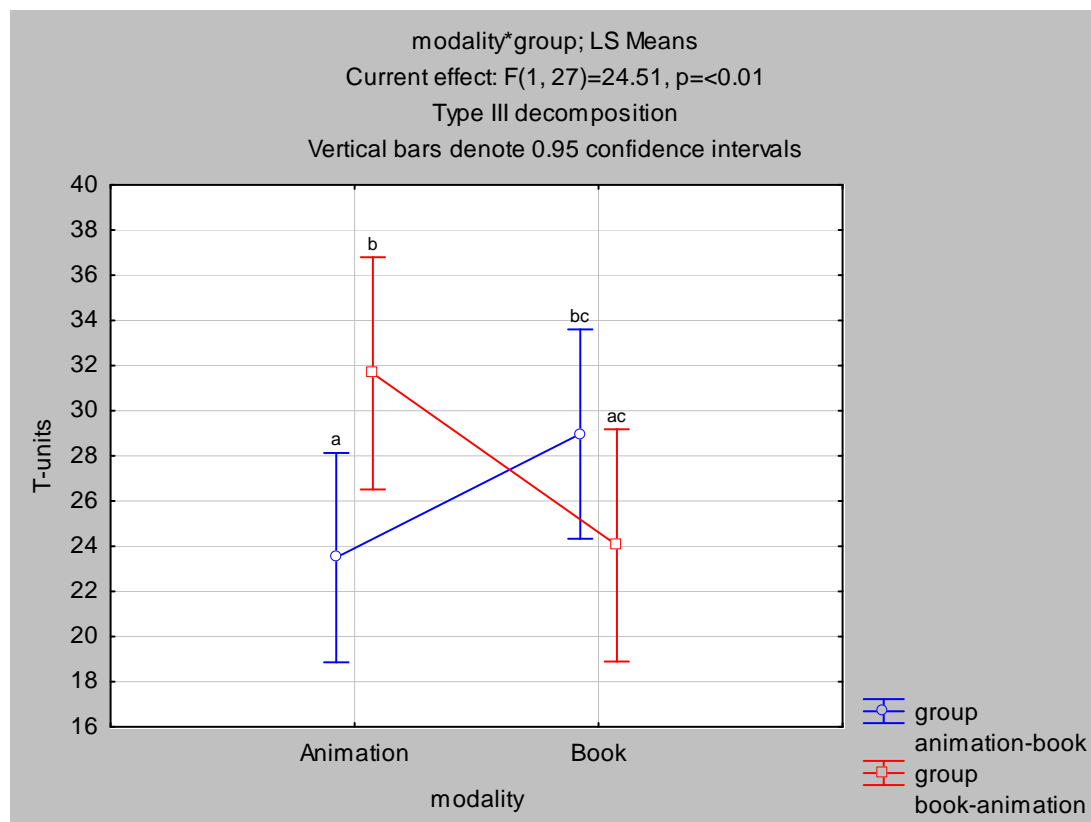
Figure 4.2.1.3: *Productivity: Mean scores for number of T-units by modality and group (letters indicate significant differences on a 5% (p<0.05) level)*

Does the MLE after narrative 1 result in a higher total number of T-units in narrative 2?

A significant third order interaction was found (F(1, 27)=5.04, p=0.03) and is depicted in figure 4.2.1.4. The mean total number of T-units produced in narrative 2 of each modality and group was significantly higher than in narrative 1, except in the animated video modality of group 1, which had a very similar total number of T-units in both narratives. Participants of group 1 reached a plateau during story tellings in the second exposure (animated video), and the MLE in the second exposure did not aid in a significantly higher total number of T-units in narrative 2, similar to the TNW.

Summary of total number of T-units:

T-units have been used to measure the expressive language syntax of children and adolescents (Owens, 2004). The difference in the total number of T-units was not significant for the two modalities. In other words, participants produced a similar number of T-units in both visual modalities.

Participants benefited from the MLE and produced significantly higher number of T-units in narrative 2 of each modality and group, except in the animated video modality of group 1, probably as a result of a plateau effect.
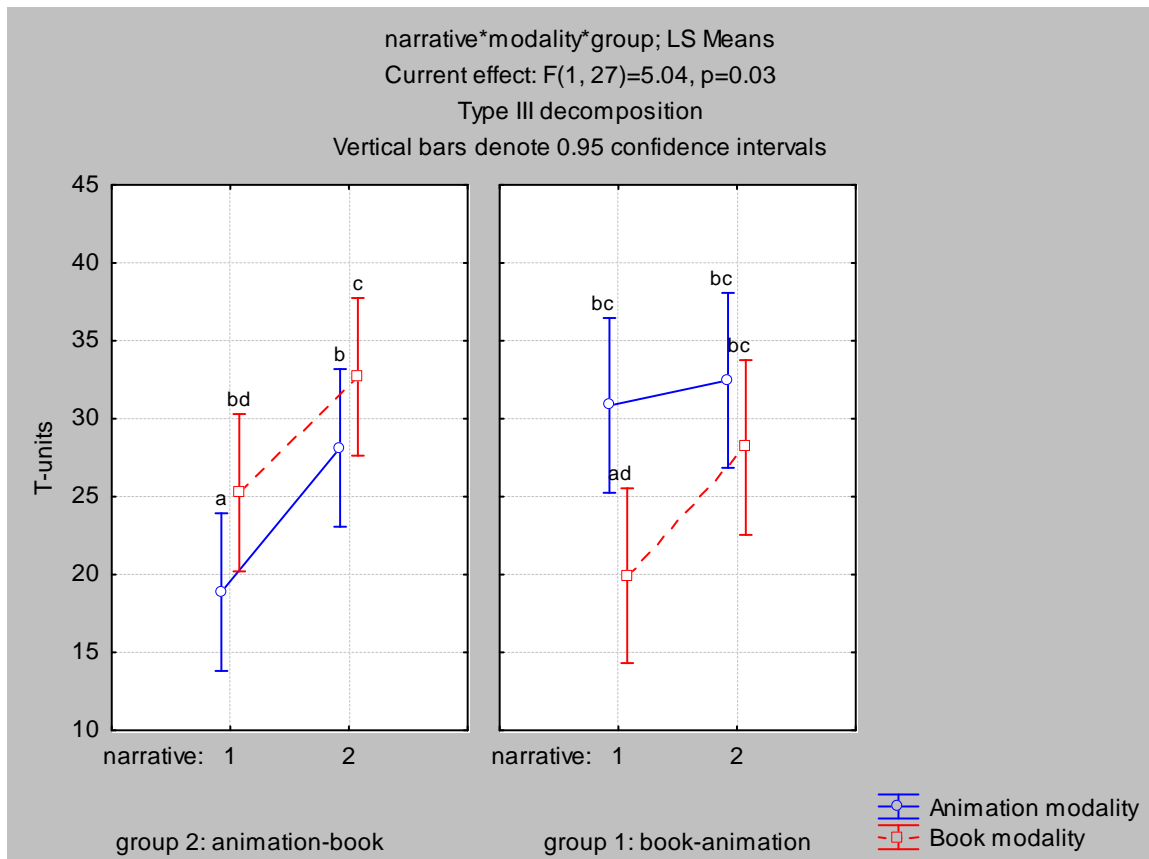
Figure 4.2.1.4: *Productivity: Mean scores for number of T-units by group, narrative and modality (letters indicate significant differences on a 5% (p<0.05) level)*

4.2.2   Syntactic complexity:

4.2.2.1 Mean length of T-unit (MLT):

The mean length of T-unit is a measure of language complexity. A T-unit is regarded as a more sensitive measure than the mean length of utterance (MLU) for children over 5 years, as it identifies phrasal embedding and other types of subordinate clauses (Owens, 2004). Table 4.2.2 provides the scores of the MLT for narrative 1 and narrative 2 of participants in group 1 and group 2.

Table 4.2.2: *Syntactic Complexity: Participants' mean length of T-unit for Narrative 1(N1) (First narrative production before the MLE) and Narrative 2 (N2) (Second narrative production after the MLE)*

| Participant: | GROUP 1: Mean length of T-unit | | | | Participant: | GROUP 2: Mean length of T-unit | | | |
| | 1.Book | | 2.Animation | | | 1. Animation | | 2. Book | |
	N1	N2	N1	N2		N1	N2	N1	N2
1.	8.9	7.8	8.0	8.6	14.	9.7	9.5	11.0	10.1
2.	7.1	8.1	7.7	8.2	15.	8.6	9.6	8.8	9.0
3.	9.1	9.6	9.3	8.9	16.	8.2	8.8	8.3	7.9
4.	8.9	8.5	8.1	8.4	17.	8.3	7.4	8.9	9.6
5.	8.1	9.6	9.0	10.2	18.	8.7	8.1	9.4	8.8
6.	8.7	9.0	8.7	9.0	19.	8.0	9.3	8.9	8.8
7.	8.9	8.4	9.1	8.3	20.	10.4	11.0	12.5	12.1
8.	7.4	8.3	7.0	7.5	21.	9.6	10.1	9.5	10.6
9.	6.5	7.6	8.3	7.8	22.	8.2	9.1	8.2	7.7
10.	7.7	8.0	7.9	7.6	23.	8.6	7.7	9.1	8.2
11.	11.3	11.4	9.2	8.8	24.	7.5	8.6	9.2	9.3
12.	7.8	6.9	7.1	7.2	25.	6.5	7.0	7.3	7.8
13.	9.4	9.1	8.5	10.4	26.	8.4	10.4	8.7	9.5
					27.	7.2	8.7	8.4	9.4
					28.	7.7	8.2	7.2	7.7
					29.	7.9	8.4	8.4	8.7
Ave.	8.4	8.6	8.3	8.5	Ave.	8.3	8.9	9.0	9.1

Is there a difference in the MLT of narratives in response to the wordless picture book and animated video?

No significant differences in the MLT between the narratives of the animated video presentation and the wordless picture book were found (first exposure: $F(1, 27)=0.03$, $p=0.87$, second exposure: $F(1, 27)=2.56$, $p=0.12$). In other words, participants produced a similar mean length of T-unit (MLT) during the wordless picture book modality and animated video modality (see table 4.2.4 below for a description of the two separate analyses for the 1st and 2nd exposures with MLT as dependent variable).

Does the MLE after narrative 1 result in a higher MLT in narrative 2?

There was a significant main effect of narrative with regards to the MLT ($F_{(1, 27)}=5.34$, $p=0.03$) and is depicted in figure 4.2.2.1. This indicates that the mean length of T-unit was only influenced by narrative (narrative 1 and narrative 2). In other words, the group and modality did not have an effect on the MLT, which means that regardless of in which group the participants were separated into, or the modality that they were exposed to, only during narrative 1 and narrative 2, did a significant difference occur between scores. The mean length of T-unit in narrative 2 was significantly higher than the mean length of T-unit in narrative 1 of each group and modality. Thus, the MLE prompted children to produce significantly longer T-units during the second narrative in each group and visual modality.
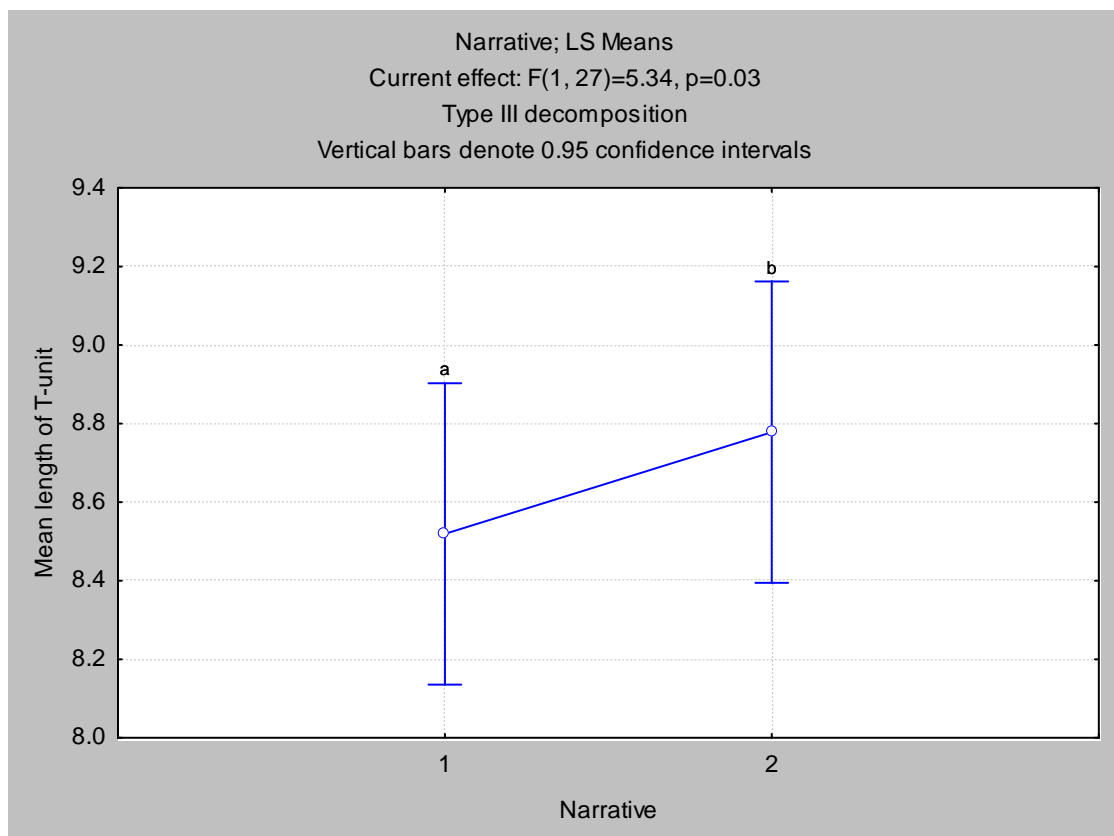
Figure 4.2.2.1: *Syntactic complexity: MLT by narrative 1 and narrative 2 (letters indicate significant differences on a 5% (p<0.05) level)*

Summary of MLT:

The difference in the mean length of T-units was not significant for the two visual modalities. In other words, participants produced narratives with similar mean length of T-units during the wordless picture book and animated video modalities. The MLE after narrative 1 resulted in a significantly higher MLT in narrative 2, regardless of the group the participants were divided into, or the visual modality.

4.2.3   Lexical diversity:
4.2.3.1 Number of different words (NDW):

The number of different words is strongly correlated with age (Miller, 1991 as cited in Owens, 2004) and is a measure of lexical diversity (Greenhalgh & Strong, 2001).

Is there a difference in the NDW of narratives in response to the wordless picture book and animated video?

A significant second order modality-group interaction occurred ($F_{(1, 27)}=36.95$, p=<0.01) and is depicted in figure 4.2.3.1. A significantly higher mean NDW was produced in narratives during the second exposure. In other words, participants produced a significantly higher mean number of different words during the modality they were exposed to last, once again indicating that learning or carry-over occurred (similar to TNW and MLT). Comparison of the mean NDW in the first and second exposure revealed no significant differences in the two modalities (first exposure: $F_{(1, 27)}=0.54$, p=0.47, second exposure: $F_{(1, 27)}=0.01$, p=0.93), which means that participants produced a similar number of different words during the wordless picture book modality and video animation modality. See Table 4.2.4 for a description of the two separate analyses for the 1st and 2nd exposures with NDW as dependent variable.
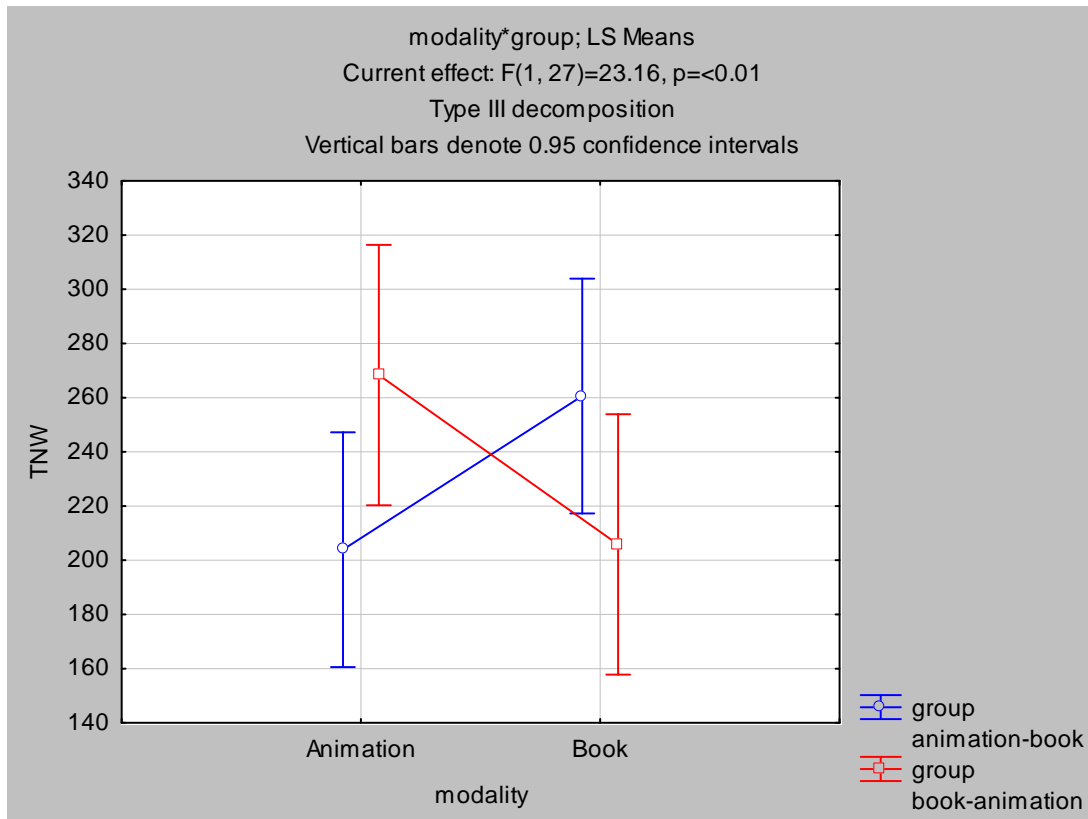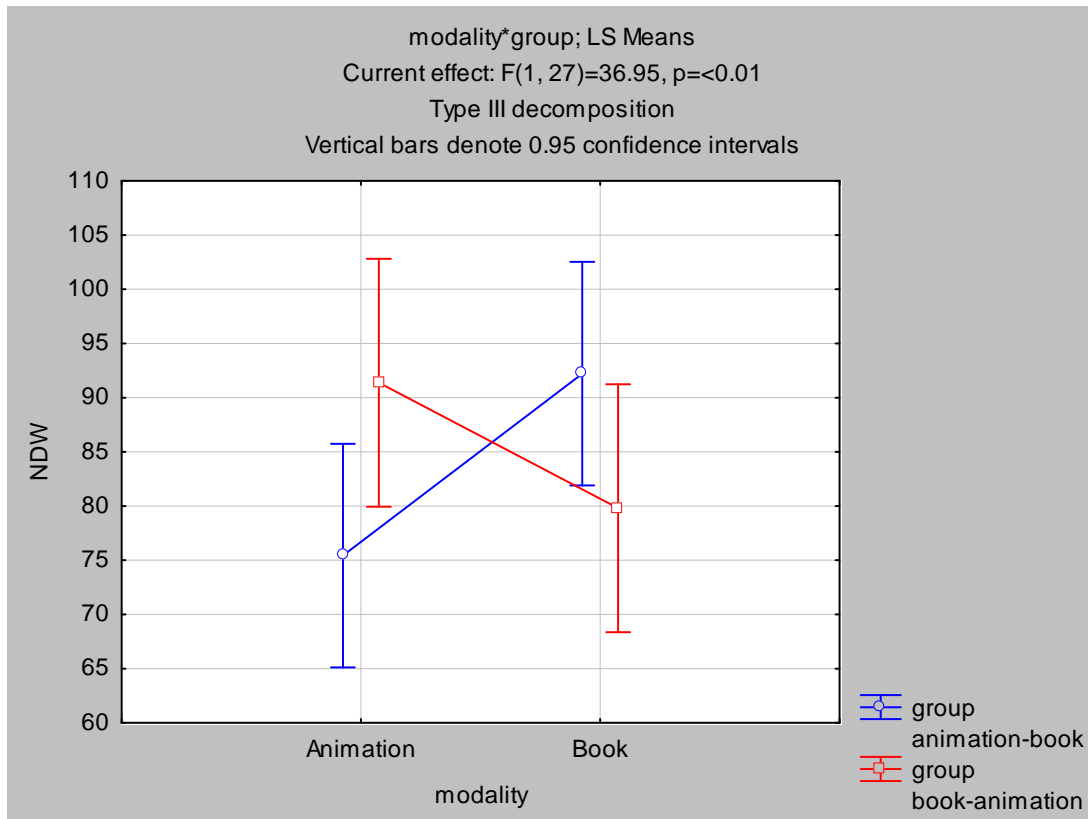
Figure 4.2.3.1: *Lexical diversity: Mean NDW scores by modality and group (letters indicate significant differences on a 5% (p<0.05) level)*

Does the MLE after narrative 1 result in a higher NDW in narrative 2?

The mean NDW was significantly affected by the narrative, modality and group ($F_{(1, 27)}=12.00$, p=<0.01) (see figure 4.2.3.2). Narrative 2 produced a significant higher mean NDW than narrative 1 in each group and modality, except for the animated video modality in group 1. These results concur with the results of the effect of MLE on the variables TNW and MLT. Participants in group 1 also obtained similar scores for TNW and MLT in narrative 1 and narrative 2 of the animated video modality, similar to NDW. This indicates that the MLE did not have a significant effect on participant's TNW, MLT and NDW scores in the second exposure (animated video). Table 4.2.3 presents the total NDW for each participant in group 1 and group 2, as well as the average scores and range of scores for each narrative.

Table 4.2.3:   *Lexical Diversity: Participants' scores for the total number of different words for Narrative 1 (N1) (First narrative production before the MLE) and Narrative 2 (N2) (Second narrative production after the MLE)*

|	GROUP 1:					GROUP 2:			
Participant	**Total number of different words (NDW)**				**Participant**	**Total number of different words (NDW)**			
	1.Book		**2.Animation**			**1.Animation**		**2.Book**	
	N1	N2	N1	N2		N1	N2	N1	N2
1	105	153	146	151	**14**	65	64	69	86
2	61	89	97	96	**15**	59	86	87	86
3	78	83	71	75	**16**	68	101	97	107
4	72	82	75	73	**17**	53	59	62	66
5	75	93	109	134	**18**	54	103	97	122
6	80	127	130	138	**19**	71	95	99	155
7	71	72	72	76	**20**	71	103	114	121
8	54	77	64	57	**21**	85	109	101	133
9	44	58	63	65	**22**	62	95	86	95
10	60	71	69	80	**23**	46	91	94	97
11	74	106	100	99	**24**	67	86	83	90
12	56	73	69	70	**25**	42	62	60	79
13	82	79	98	99	**26**	79	96	82	99
					27	77	93	92	103
					28	60	73	63	68
					29	63	76	71	87
Ave.	70	89	89	93	**Ave.**	64	87	85	100
Range	44 – 105	58 – 153	63 – 146	57 - 151	**Range**	42 – 85	58 – 109	60 – 114	66 - 155
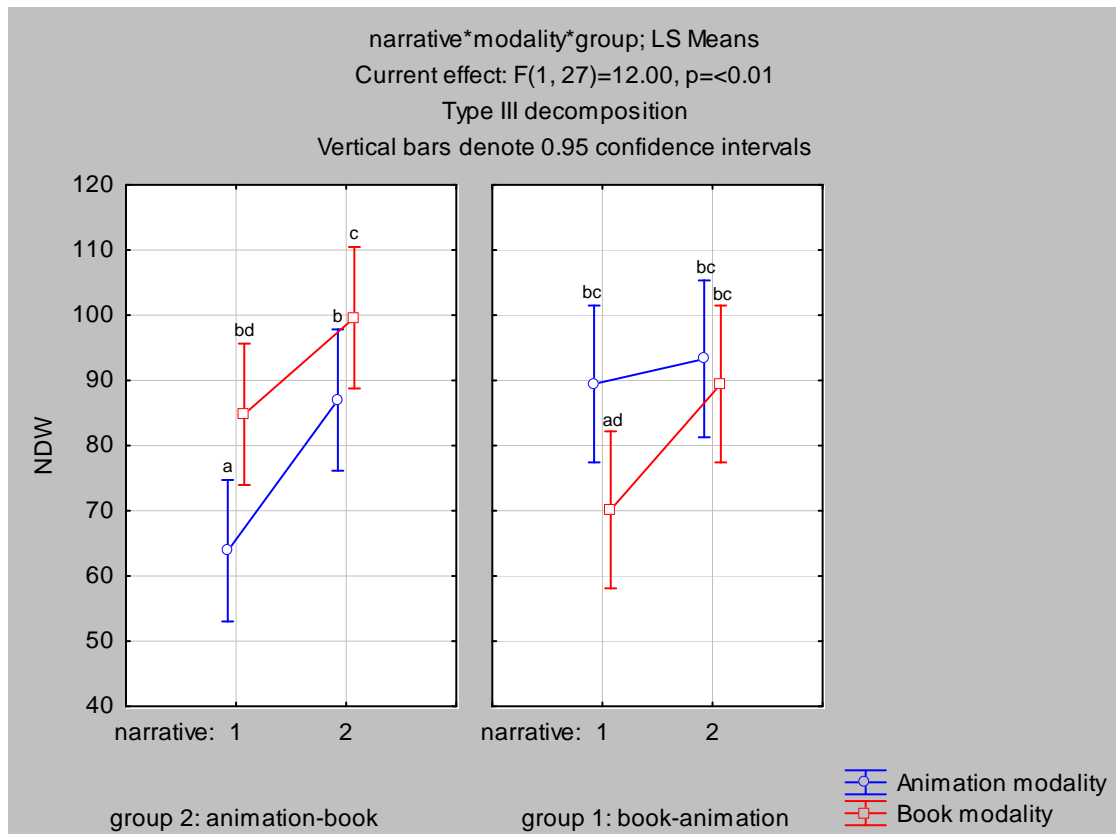
Figure 4.2.3.2: *Lexical diversity: Mean NDW scores by group, narrative and modality (letters indicate significant differences on a 5% (p<0.05) level)*

Results depicted in the above figure indicate the significant third order interaction that occurred between the narrative, modality and group for the mean NDW ($F_{(1, 27)}=12.00$, $p=<0.01$).

Summary of NDW:

No significant difference was found for the NDW of the two visual modalities. Participants produced a similar number of different words during the wordless picture book and animated video modalities. Narrative 2 had a significantly higher NDW than narrative 1, except in the animated video modality of group 1. This means that the MLE resulted in a significantly higher number of different words in each visual modality, but the MLE had no significant effect on the second narratives produced during the animated video modality.

Table 4.2.4: *Summary of two separate analyses for the 1ˢᵗ and 2ⁿᵈ exposures with TNW, total number of T-units, MLT and NDW as dependent variables*

Independent variable	Effect	First exposure			Second exposure		
		Degrees of Freedom	F	p	Degrees of Freedom	F	p
Total number of words (TNW)	Narrative	1,27	50.22	<0.01	1,27	12.75	<0.01
	Modality	1,27	0.01	0.93	1,27	0.04	0.85
	Narrative*Modality	1,27	0.65	0.43	1,27	3.05	0.09
Total number of T-units	Narrative	1,27	38.10	<0.01	1,27	8.80	0.01
	Modality	1,27	0.06	0.81	1,27	0.40	0.53
	Narrative*Modality	1,27	0.13	0.72	1,27	3.64	0.07
Mean length of T-unit (MLT)	Narrative	1,27	5.52	0.03	1,27	1.49	0.23
	Modality	1,27	0.03	0.87	1,27	2.56	0.12
	Narrative*Modality	1,27	1.19	0.29	1,27	0.30	0.59
Total number of different words (NDW)	Narrative	1,27	61.15	<0.01	1,27	18.44	<0.01
	Modality	1,27	0.54	0.47	1,27	0.01	0.93
	Narrative*Modality	1,27	0.49	0.49	1,27	6.37	0.02

Results depicted in table 4.2.4 indicate that there were no significant differences in the productivity (TNW and total number of T-units), syntactic complexity (MLT) and lexical diversity (NDW) measures between animated video and wordless picture book modalities in each exposure. P-values highlighted in grey indicate the insignificant differences.

Summary of results of productivity, lexical complexity and lexical diversity measures:

Is there a difference in the micro-structural measures of narratives in response to a wordless picture book and an animated video?

In summary, no significant differences were found between the wordless picture book and animated video modalities with regards to the productivity, syntactic complexity and lexical diversity measures. Both visual modalities elicited narratives of similar quality in terms of micro-structural measures.

A carry-over effect occurred with regards to the mean TNW, total number of T-units and total NDW. In other words, the highest scores of these dependent variables were found during the modality in the second exposure session. This means that participants who were for example, exposed to the wordless picture book during the first exposure session and to the animated video during the second exposure session, produced higher scores in terms of these three measures in the animated video presentation. It can be concluded that participants remembered the story they were exposed to during the first exposure session, and carried over these skills to the second exposure. They therefore produced higher scores of TNW, total number of T-units and total NDW in the second exposure session.

Does a MLE after narrative 1 result in higher micro-structural measures in narrative 2?

A significant third order interaction between narrative, group and modality was found in the mean scores of TNW, total number of T-units and total NDW. Only a main effect of narrative occurred in the MLT scores. Narrative 2 in each modality and group of the TNW, total number of T-units and total NDW resulted in significantly higher scores, indicating that the MLE after the first narrative contributed to the significantly higher scores obtained in narrative 2. However, the mean scores of TNW, total number of T-units, and total NDW of narrative 2 during the animated video modality in group 1, were not significant higher than narrative 1. The MLT scores were significantly affected by narrative 1 and narrative 2, regardless of the

modality and group. Participants produced significantly higher MLT scores in narrative 2 in each group and modality.

The conclusion can be made that the MLE resulted in higher scores in narrative 2 in terms of micro-structural measures. However, for some of these measures, such as the TNW, MLT and NDW of group 1 during the animated video modality, the differences between the narratives before and after MLE were not significant.

4.3   Macro-Structural Measures:

Participants' narratives were also analysed on a macro-structural level to investigate the global organisation of their narratives and to determine if they could produce coherent, goal-directed narratives. The ability to include goal-attempt-outcome (GAO) sequences in narratives is an indication that children can produce goal directed and coherent narratives (Lorch et al., 2007; Renz et al., 2003). The inclusion of GAO's is therefore considered to be a sensitive marker for macro-structural development in children's narratives.

4.3.1   Goal-Attempt-Outcome Sequences:

The marking protocol compiled by the researcher, based on the model narrative written for the story, stipulated 5 possible goal-attempt-outcome (GAO) sequences. Participants could achieve a possible maximum score of 3 for each GAO sequence (1 point for the *Goal*, 1 point for the *Attempt*, 1 point for the *Outcome*). In other words, a participant obtained a score of 3/3 for a GAO sequence if he/she included all three elements (goal, attempt and outcome). If however, for example, a participant did not include a goal in a GAO sequence, a score of 2/3 was obtained. If a participant did not include any of the elements according to the marking protocol, a score of 0/3 was given.

4.3.1.1 GAO 1:

Table 4.3.1.1 (below) provides a summary of the main effects, second order interactions and third order interactions of the independent variables (narrative, modality and group) for GAO 1. In other words, the mean scores for GAO 1 are depicted according to the effects and interactions that occurred. The researcher aimed

to portray GOA 1 in pictures 1-4 of the model story (see appendix C for pictorial content of story). During GAO 1, children were expected to relate what the boy and girl were doing in the house, how they felt and what the children wanted to do or think about doing (G). They were also expected to say that the boy and girl went outside to play (A) with their ball and the ball ended up on the roof (O).

Table 4.3.1.1: *Summary of the GEE analysis with GAO 1 as dependent variable*

Effect	Wald Chi-Square	df	Sig.
Narrative	15.79	1	<0.01
Modality	0.12	1	0.73
Group	0.42	1	0.52
Narrative*modality	1.53	1	0.22
Narrative*group	0.04	1	0.85
Modality*group	1.76	1	0.19
Narrative*modality*group	4.07	1	0.04

Is there a difference in the scores of GAO 1 of narratives in response to a wordless picture book and an animated video?

As shown in table 4.3.1.1 no significant main effect of modality was found (Wald Chi-Square(1)=0.12, p=0.73). Participants obtained similar scores for GAO 1 during the animated video and wordless picture book

Does a MLE after narrative 1 result in a higher score of GAO 1 in narrative 2?

A significant third order interaction occurred between the narrative, modality and group (Wald Chi-Square(1)=4.07, p=0.04). The scores out of 3 for GAO 1 were significantly higher in narrative 2 in each modality and group, except during the book modality of group 2. These results are depicted in figure 4.3.1.1.
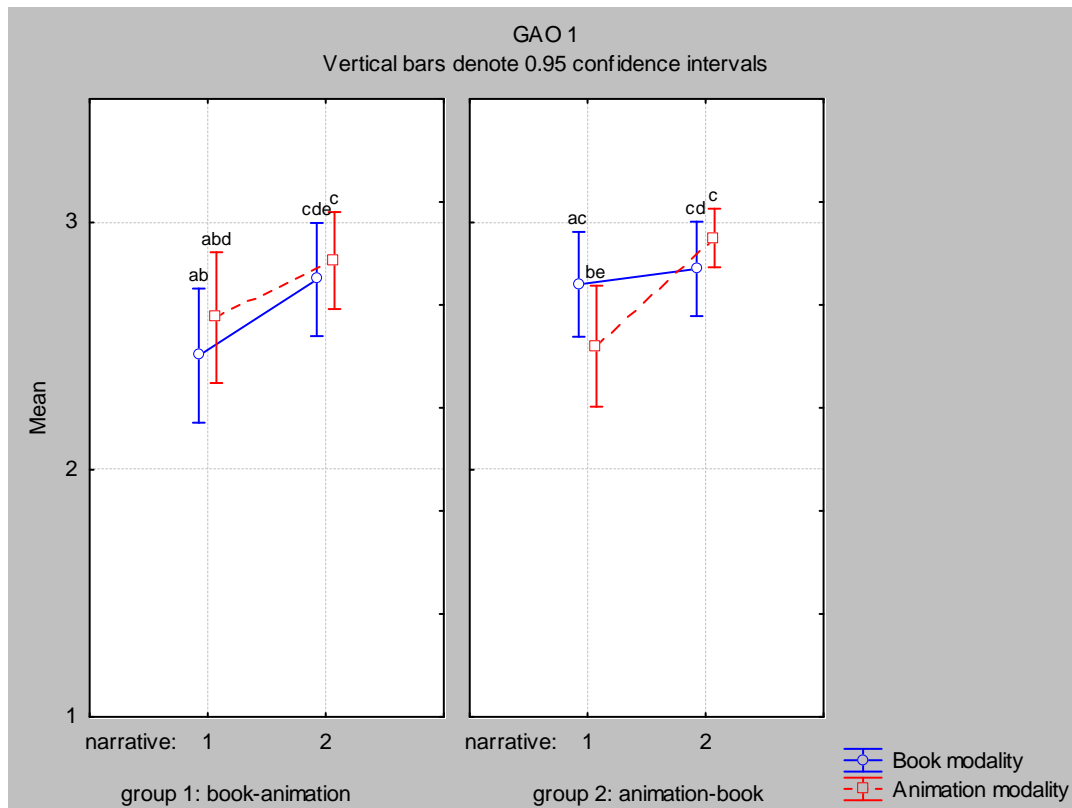
Figure 4.3.1.1: *GAO 1 by group, narrative and modality (letters indicate significant differences on a 5% (p<0.05) level)*

4.3.1.2 GAO 2:

GAO 2 is portrayed in picture 5-7 of the story (See Appendix C). Participants were expected to say that the children wanted to get the ball off the roof (G), that they fetched a ladder (A) and that the ball was removed from the roof (O).

Is there a difference in the scores of GAO 2 of narratives in response to a wordless picture book and an animated video?

No main effect of modality was found (Wald Chi-Square(1)=0.01, p=0.91), as can be seen in Table 4.3.1.2. The scores of GAO 2 of the narratives in the wordless picture book and animated video were similar. However, a second order modality-group interaction occurred in GAO 2 (Wald Chi-Square(1)=23.36, p=<0.01) (see table 4.3.1.2). Participants in both groups obtained significantly higher scores out of 3 during the second exposure (See figure 4.3.1.2.1). Table 4.3.1.2 provides a summary of the main effects, second order interactions and third order interactions of the independent variables (narrative, modality and group) for GAO 2.

Table 4.3.1.2: *Summary of the GEE analysis with GAO 2 as dependent variable*

Effect	Wald Chi-Square	df	Sig.
Narrative	14.52	1	<0.01
Modality	0.01	1	0.91
Group	0.05	1	0.82
Narrative*modality	3.73	1	0.05
Narrative*group	0.93	1	0.34
Modality*group	23.36	1	<0.01
Narrative*modality*group	0.64	1	0.42

Does a MLE after narrative 1 result in a higher score of GAO 2 in narrative 2?

The results in Table 4.3.1.2 illustrate that a significant main effect for narrative was found (Wald Chi-Square(1)=14.52, p=<0.01). Participants obtained significantly higher scores out of 3 in narrative 2 than in narrative 1 as can be seen in figure 4.3.1.2.2.
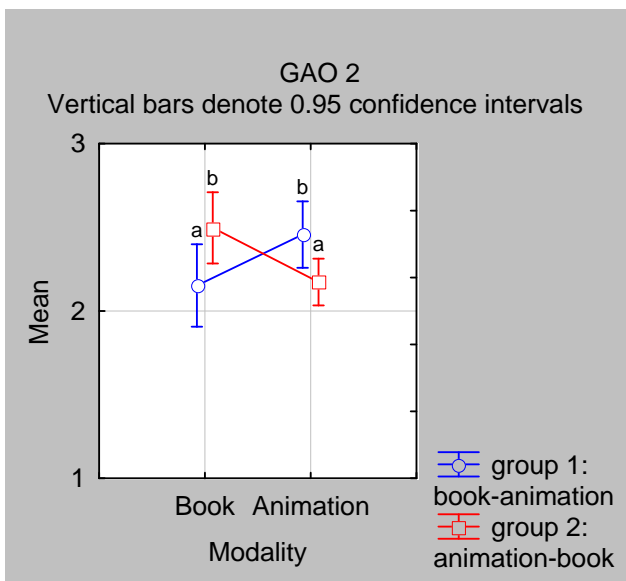
Figure 4.3.1.2.1: GAO 2 by group and modality (letters indicate significant differences on a 5% (p<0.05) level)
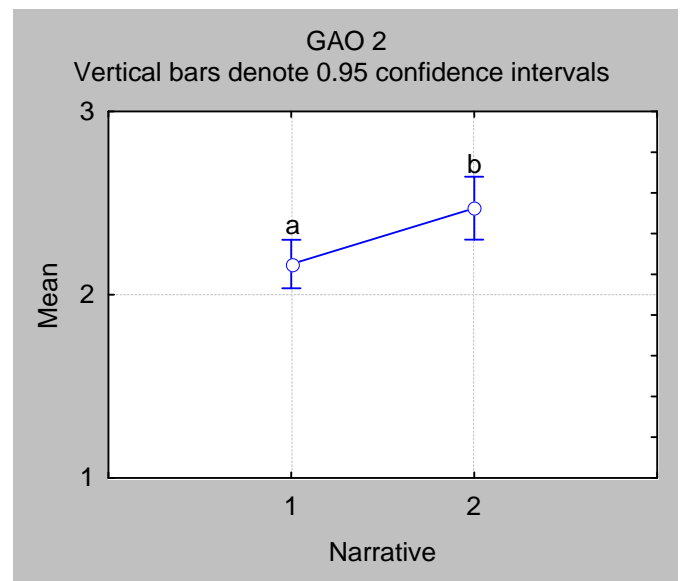
Figure 4.3.1.2.2: GAO 2 by narrative 1 and narrative 2 (letters indicate significant differences on a 5% (p<0.05) level)

4.3.1.3 GAO 3:

GAO 3 is portrayed in picture 8-11 of the pictorial content of the model story (see Appendix C). During GAO 3, participants were expected to mention what the boy wanted to do with the eggs (G), that he tried to take the eggs (A), and that the boy fell off the roof and/or got hurt (O).

Is there a difference in the scores of GAO 3 of narratives in response to a wordless picture book and an animated video?

Narratives in both modalities had similar scores in GAO 3. As depicted in table 4.3.1.3, no significant main effect of modality was found and the scores of GAO 3 in the wordless picture book and animated video were similar (Wald Chi-Square(1)=1.13, p=0.29).

Table 4.3.1.3: *Summary of the GEE analysis with GAO 3 as dependent variable*

Effect	Wald Chi-Square	df	Sig.
Narrative	17.46	1	<0.01
Modality	1.13	1	0.29
Group	0.24	1	0.62
Narrative*modality	0.57	1	0.45
Narrative*group	0.09	1	0.76
Modality*group	2.82	1	0.09
Narrative*modality*group	0.70	1	0.40

Does a MLE after narrative 1 result in a higher score of GAO 3 in narrative 2?

A significant main effect of narrative occurred, in other words there was a significant increase in the scores out of 3 from narrative 1 to narrative 2 (Wald Chi-Square(1)=17.46, p=<0.01) (see figure 4.3.1.3).
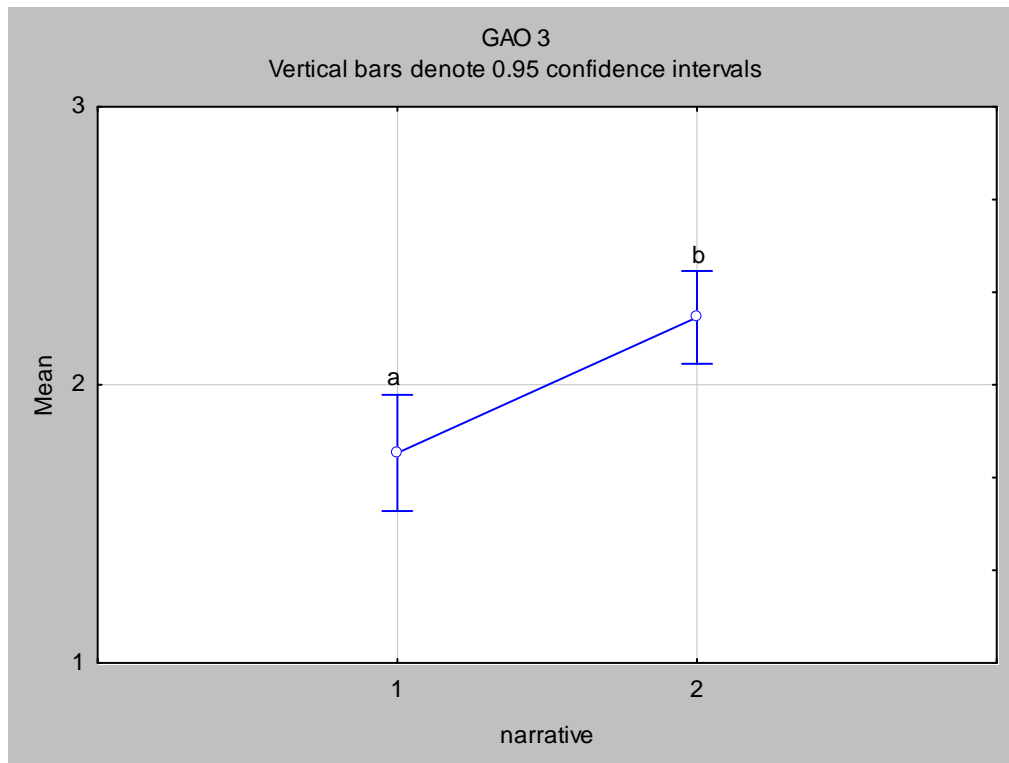
Figure 4.3.1.3: GAO 3 by narrative 1 and narrative 2 (letters indicate significant differences on a 5% (p<0.05) level)

4.3.1.4 GAO 4:

GAO 4 is depicted in the same pictures as GAO 3 (picture 8-11 in Appendix C), but GAO 4 focuses on the bird as the main character in this segment of the story. Participants were expected to say what the mother bird wanted to do (G), what she did (A), and that the boy fell or hurt himself as a result of her actions (O).

Is there a difference in the scores of GAO 4 of narratives in response to a wordless picture book and an animated video?

No significant differences in the narratives of the wordless picture book and animated video were found (Wald Chi-Square(1)=0.02, p=0.88), in other words no significant main effect of narrative occurred as can be seen in table 4.3.1.4 (below). Table 4.3.1.4 summarises the main effects, second order interactions and third order interactions of the independent variables (narrative, modality and group) for GAO 4.

Table 4.3.1.4: *Summary of the GEE analysis with GAO 4 as dependent variable*

Effect	Wald Chi-Square	df	Sig.
Narrative	7.91	1	<0.01
Modality	0.02	1	0.88
Group	0.80	1	0.37
Narrative*modality	2.20	1	0.14
Narrative*group	2.60	1	0.11
Modality*group	1.74	1	0.19
Narrative*modality*group	0.65	1	0.42

Does a MLE after narrative 1 result in a higher score of GAO 4 in narrative 2?

A significant main effect of narrative occurred. Significantly higher scores out of 3 in narrative 2 were found for GAO 4 (Wald Chi-Square(1)=7.91, p=<0.01) (See figure 4.3.1.4).
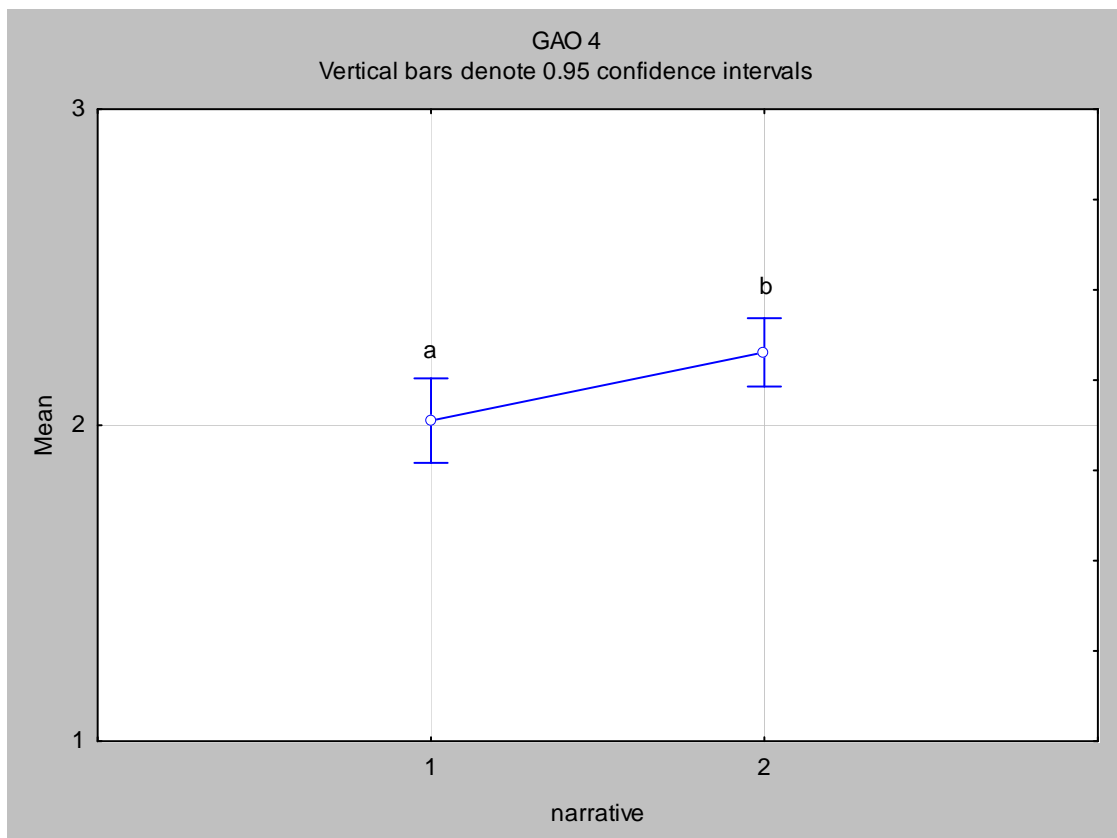
Figure 4.3.1.4: *GAO 4 by narrative 1 and narrative 2 (letters indicate significant differences on a 5% (p<0.05) level)*

4.3.1.5 GAO 5:

GAO 5 of the model story is related to the mother of the children in the story. Participants were expected to say what the mother wanted or planned to do when she saw that the boy was hurt (G), what she then did (took him to the hospital), (A) and that the boy was helped or received medical attention (O) (see Appendix C for pictorial content).

Is there a difference in the scores of GAO 5 of narratives in response to a wordless picture book and an animated video?

No significant main effect of modality was found in GAO 5 (Wald Chi-Square(1)=0.29, p= 0.59) as can be seen in table 4.3.1.5.

Table 4.3.1.5: *Summary of the GEE analysis with GAO 5 as dependent variable*

Effect	**Wald Chi-Square**	**df**	**Sig.**
Narrative	16.80	1	<0.01
Modality	0.29	1	0.59
Group	1.03	1	0.31
Narrative*modality	0.59	1	0.44
Narrative*group	4.53	1	0.03
Modality*group	0.60	1	0.44
Narrative*modality*group	7.82	1	0.01

Does a MLE after narrative 1 result in a higher score of GAO 5 in narrative 2?

In GAO 5 a significant third order interaction was found in the group, narrative and modality, as can be seen in table 4.3.1.5 and figure 4.3.1.5 (Wald Chi-Square(1)=7.82, p=0.01). Participants' scores were significantly higher in narrative 2 in each group and modality, except during the book modality of group 2. Participants in group 1 showed a significant increase in their scores from narrative 1 to narrative 2 during the animated video modality and book modality. Participants in group 2 only showed a significant increase between narrative 1 and narrative 2 of the animated video modality. No increase was found in the narratives of the book modality in group 2.
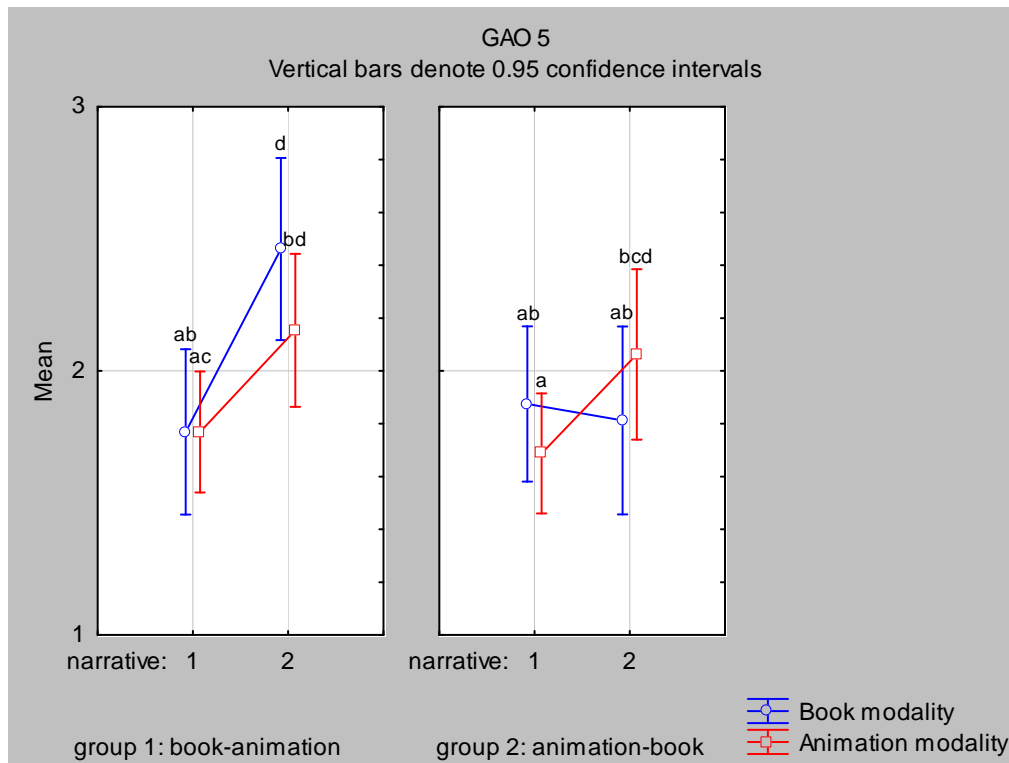
Figure 4.3.1.5: *GAO 5 by group, narrative and modality (letters indicate significant differences on a 5% (p<0.05) level)*

Summary of results of the GAO sequences

Is there a difference in the scores of the GAO sequences of narratives in response to a wordless picture book and an animated video?

In GAO 1 and GAO 5 participants performed similarly in each modality, but showed a significant increase in scores from narrative 1 to narrative 2, except participants in group 2 during the book modality who obtained very similar scores in narrative 1 and narrative 2. A carry-over effect occurred in GAO 2 in terms of the visual modality, where participants obtained higher scores in the second exposure to a modality. However, no significant difference in the scores of GAO 2 in the two modalities was found. The visual modality also did not influence GAO 3 and GAO 4, and participants obtained similar scores in both modalities.

Does a MLE after narrative 1 result in a higher score of the GAO sequences in narrative 2?

Overall, participants obtained significantly higher scores out of 3 for each GAO sequence in narrative 2 than in narrative 1. However, in GAO 1 and GAO 5, participants obtained significantly higher scores in narrative 2 than in narrative 1 in each modality, except participants in group 2 during the book modality where there was no significant difference between narrative 1 and narrative 2 of GAO 1 and GAO 5. In other words, the MLE during the book modality of group 2 did not result in a significant increase of participants' scores for GAO 1 and GAO 5, from the first to the second narrative.

4.3.2 Total Goals:

Participants were scored according to their inclusion of goals in their narratives. The goals in the narratives of this study resemble the internal responses and internal plans described by the story grammar theory (Stein & Glenn, 1979). Participants obtained scores of 1 or 0 for the inclusion of a goal in each GAO sequence, and could therefore obtain a total score of 5 for each narrative. Table 4.3.2 summarises the main effects, and second and third order interactions of the independent variables (narrative, modality and group) for the mean total number of goals.

Table 4.3.2: *Summary of the GEE analysis with total goals as dependent variable*

Effect	Wald Chi-Square	df	Sig.
Narrative	58.73	1	<0.01
Modality	0.24	1	0.63
Group	0.04	1	0.84
Narrative*modality	0.09	1	0.76
Narrative*group	0.00	1	0.99
Modality*group	14.52	1	<0.01
Narrative*modality*group	10.61	1	<0.01

Is there a difference in the number of goals in narratives in response to a wordless picture book and an animated video?

As shown in table 4.3.2, no main effect of modality was found (Wald Chi-Square(1)=0.24, p=0.63). However, a carry-over effect was found in both groups and participants included more goals during the modality in the second exposure (Wald Chi-Square(1)=14.52, p=<0.01). Therefore, a significant modality-group interaction occurred.

Does a MLE after narrative 1 result in more inclusion of goals in narrative 2?

The results indicate that the mean total goals were significantly influenced by the narrative, group and modality as shown in table 4.3.2 (Wald Chi-Square(1)=10.61, p=<0.01). Participants included significantly more goals in narrative 2 after the MLE. The significant increase in the total number of goals from narrative 1 to narrative 2 was similar during each group's first and second exposure, regardless of the modality.

Figure 4.3.2 (below) depicts the mean total goals by group, narrative and modality. Figure 4.3.2 indicates that participants' mean score in narrative 1 of the first exposure in each group and modality was 1 or 0, indicating a very low inclusion of goals. The participants' mean score in narrative 1 of the second exposure in each group and modality was 1 or 2, indicating a slightly higher inclusion of goals. This also indicates the carry-over effect from the first exposure to the second exposure, where participants might have remembered the story of the first exposure, and thus included more goals in narrative 1 of the second exposure.

The scores obtained in narrative 2 of each group and modality were significantly higher than narrative 1 scores, but still less than 3 out of 5. These results indicate that although participants included a significantly higher amount of goals in narrative 2, the average of total goals included was still less than 3 out of 5. This indicates that, regardless of exposure to MLE, participants did not include all the goals that were specified in the marking protocol. The implications of this finding will be explained in chapter 5.
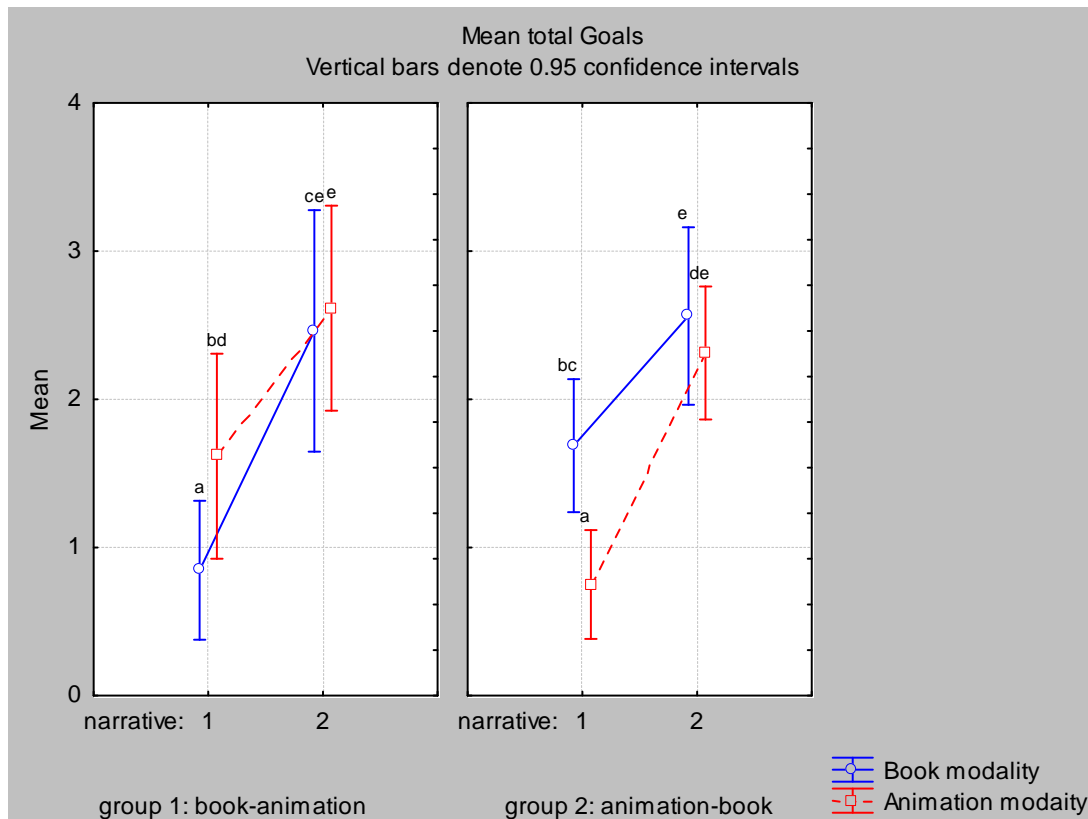
Figure 4.3.2: *Mean total goals by group, narrative and modality (letters indicate significant differences on a 5% (p<0.05) level)*

4.3.3   Total Attempts:

Attempts can be described as the overt actions of a character in an effort to achieve a goal that brings about a consequence or outcome (Stein & Glenn, 1979). Participants could achieve a score of 1 or 0 for each attempt, and a score out of 5 for the total number of attempts included in their narratives. Table 4.3.3 summarises the main effects, second and third order interactions of the independent variables (narrative, modality and group) for the mean number of total attempts.

Table 4.3.3: *Summary of the GEE analysis with total attempts as dependent variable*

Effect	Wald Chi-Square	df	Sig.
Narrative	9.06	1	<0.01
Modality	0.04	1	0.84
Group	1.25	1	0.26
Narrative*modality	0.41	1	0.52
Narrative*group	4.09	1	0.04
Modality*group	2.60	1	0.11
Narrative*modality*group	0.42	1	0.52

Is there a difference in the number of attempts in narratives in response to a wordless picture book and an animated video?

The total attempts were not influenced by the modality. Therefore, as shown in table 4.3.3, no main effect of modality was found and participants included a similar number of attempts in the wordless picture book and animated video presentation (Wald Chi-Square(1)=0.04, p=0.84).

Does a MLE after narrative 1 result in more inclusion of attempts in narrative 2?

As shown in table 4.3.3, a significant narrative-group interaction occurred (Wald Chi-Square(1)=4.09, p=0.04). In other words, the total attempts were significantly affected by the narrative and group (also see figure 4.3.3). A significant increase occurred between the mean scores of narrative 1 and narrative 2 of group 1 (mean of N1 = 4.42, mean of N2 = 4.73). The mean scores obtained in narrative 1 and narrative 2 of group 2 were not significantly different (mean of N1 = 4.69, mean of N2 = 4.75). One can therefore say that the MLE in group 2 did not aid in a significantly higher inclusion of attempts in the participants' narratives.
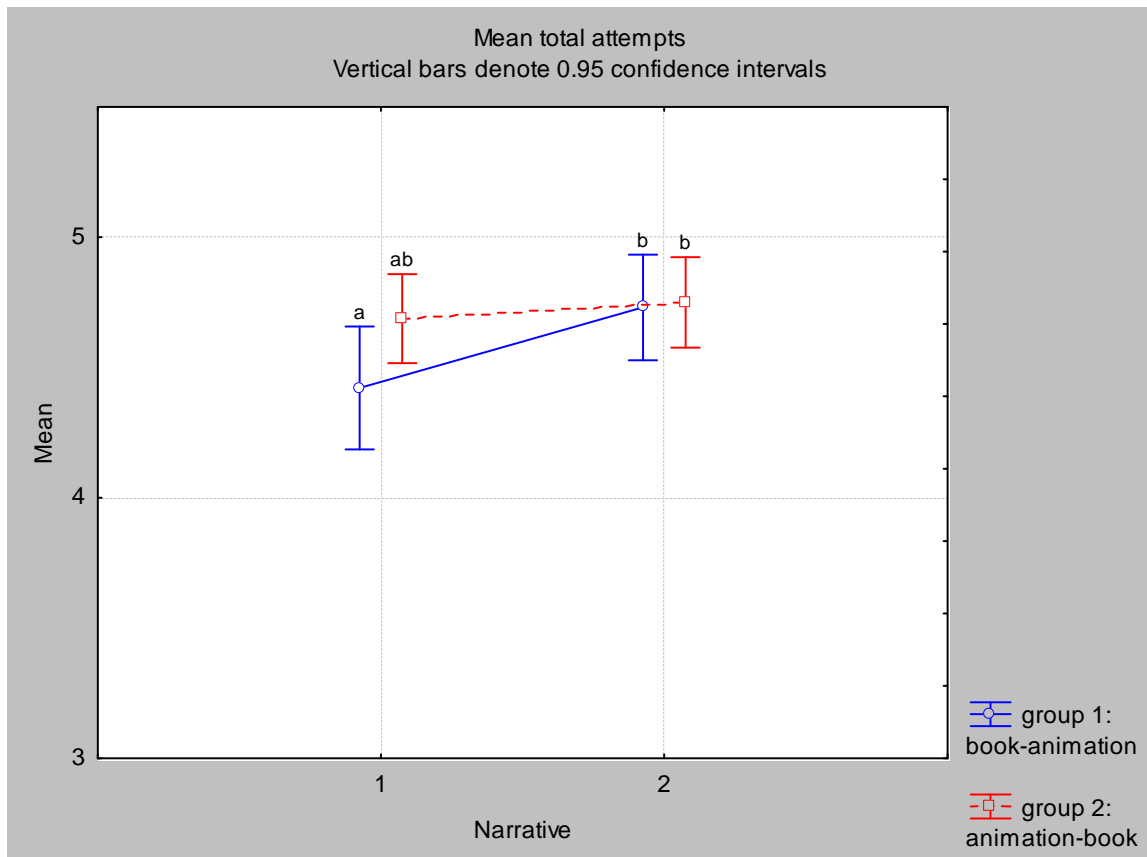
Figure 4.3.3: *Mean total attempts by narrative and group (letters indicate significant differences on a 5% (p<0.05) level)*

The mean total number of attempts for group 1 and group 2 were high. Participants obtained mean scores between 4 and 5 for narrative 1 and narrative 2. Thus, participants were more likely to include attempts in all the GAO sequences in both narrative 1 and narrative 2.

4.3.4   Total Outcomes:

The outcomes, according to the marking protocol, are very similar to the direct consequences as described by the story grammar model (Stein & Glenn, 1979), which is the character's success or failure at attaining a goal as a result of an attempt. Table 4.3.4 provides a summary of the main effects, second and third order interactions of the independent variables (narrative, modality and group) for the mean total outcomes.

Table 4.3.4: *Summary of the GEE analysis with total outcomes as dependent variable*

Effect	Wald Chi-Square	df	Sig.
Narrative	5.42	1	0.02
Modality	1.01	1	0.32
Group	4.05	1	0.04
Narrative*modality	2.60	1	0.11
Narrative*group	0.00	1	0.95
Modality*group	0.98	1	0.32
Narrative*modality*group	1.13	1	0.29

Is there a difference in the number of outcomes in narratives in response to a wordless picture book and an animated video?

No main effect of modality occurred. In other words, the inclusion of outcomes was not influenced by the modality (Wald Chi-Square(1)=1.01, p=0.32) (see table 4.3.4). Participants included a similar number of outcomes in the wordless picture book and animated video.

Does a MLE after narrative 1 result in more inclusion of outcomes in narrative 2?

A significant main effect of group occurred as shown in table 4.3.4 (Wald Chi-Square(1)=4.05, p=0.04). Group 2 (animation-book) included significantly less outcomes than group 1 (book-animation). A significant main effect of narrative also occurred as shown in table 4.3.4 (Wald Chi-Square(1)=5.42, p=0.02). Participants produced significantly more outcomes in narrative 2. Figure 4.3.4 (below) depicts this significant main effect of narrative.

Although participants obtained significantly higher scores in narrative 2, they obtained mean scores of 4 or 5 out of 5 for the total number of outcomes in both narrative 1 and narrative 2. Therefore, inclusion of outcomes can also be seen as elements that participants tended to include, regardless of exposure to MLE.
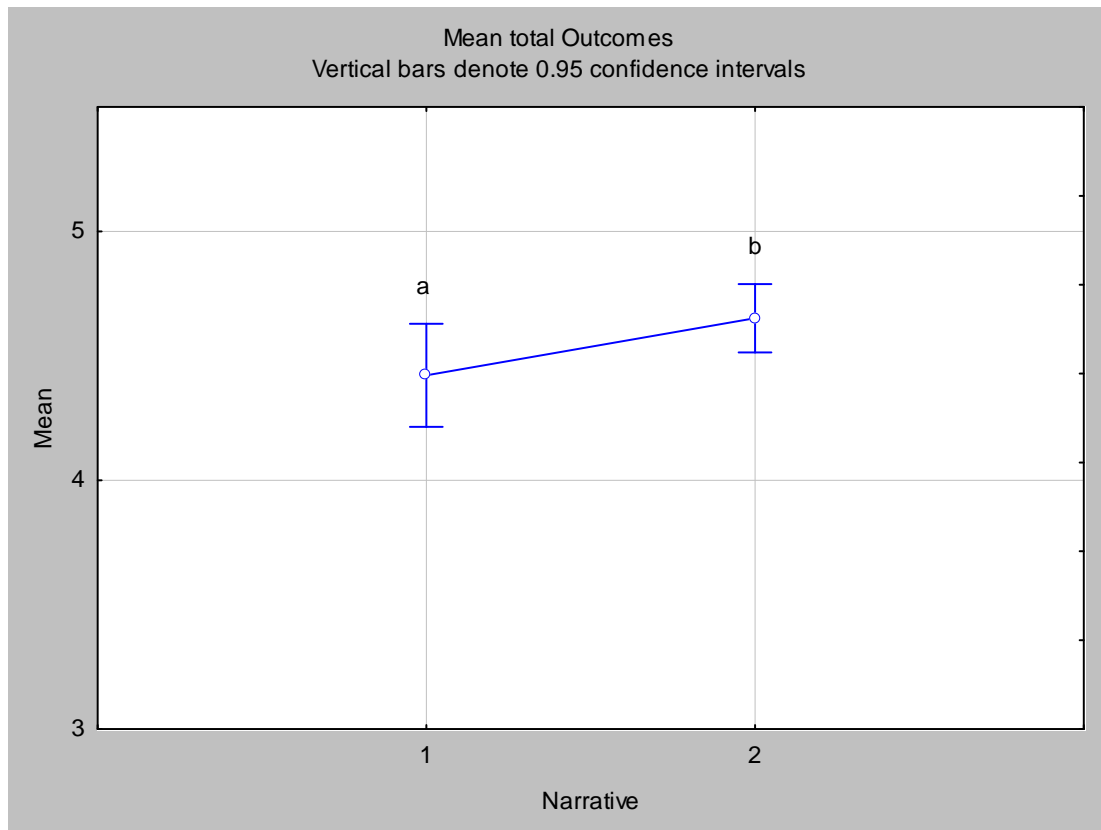
Figure 4.3.4:   *Mean total outcomes by narrative (letters indicate significant differences on a 5% (p<0.05) level)*

4.3.5   Classification tree analysis (CART) of the GAO sequences:

A CART was used to investigate the effects of group, narrative, modality, elements (goal, attempt or outcome) and GAO sequences on the inclusion of goals, attempts and outcomes in participants' narratives. The CART identified four different groupings, which are depicted in figure 4.3.5. In the first grouping, it was found that participants included attempts and outcomes 92% of the time, regardless of the group, modality, narrative or GAO sequence. Therefore, the predictable variables did not have an effect on the inclusion of attempts or outcomes in the participants' narratives. In other words, participants included attempts and outcomes most of the time. The group that the participants were assigned to, or the wordless picture book or animated video, or whether it was the first or second narrative, or in which GAO the attempt or outcome occurred, did not play a role in occurrence of these two elements (attempts and outcomes) in the narratives.
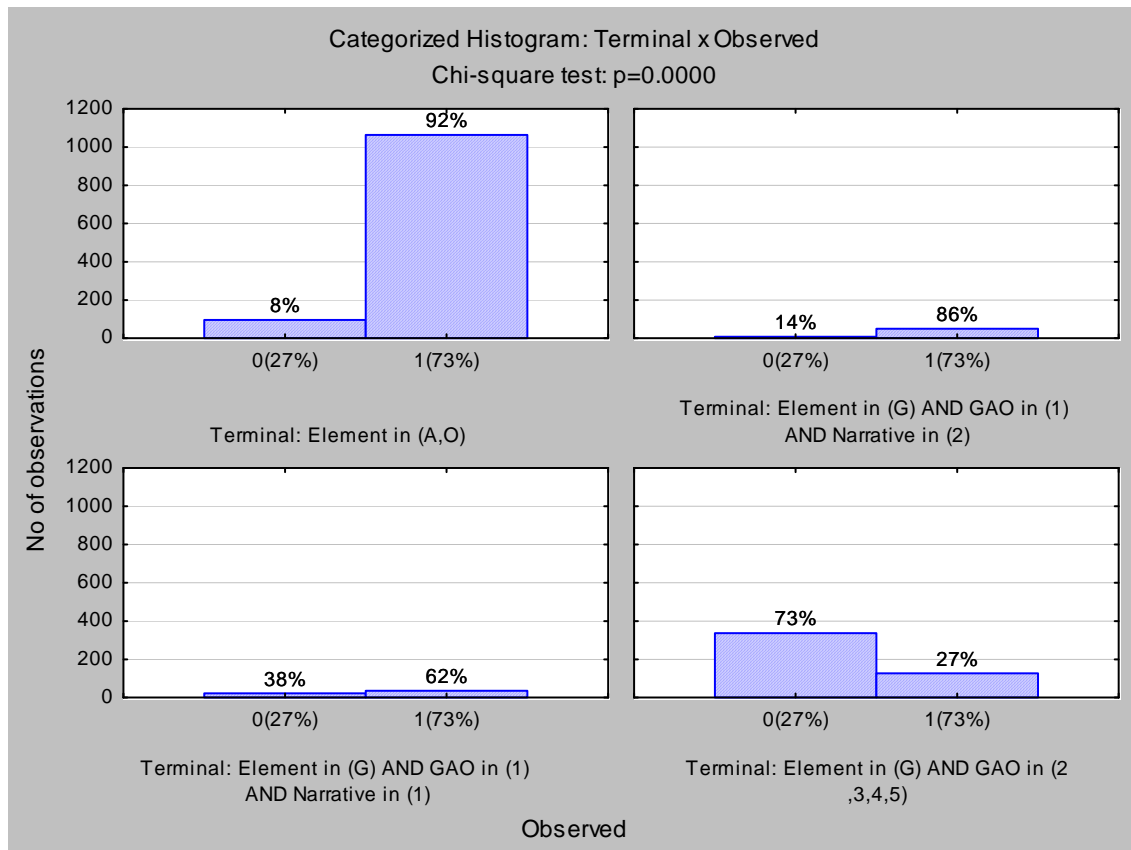
Figure 4.3.5: *The distribution responses within the 4 groupings as identified by the CART analysis (G = Goal, A = Attempt, O = Outcome)*

Participants included fewer goals than attempts and outcomes in their narratives. In the second and third grouping, the inclusion of goals was influenced by narrative 1 and narrative 2 and the first GAO sequence. Participants included a goal 86% of the time in GAO 1 of narrative 2, whereas participants included a goal only 62% of the time in the GAO 1 of narrative 1. Therefore, the inclusion of a goal in GAO 1 of narrative 2 was higher than the inclusion of a goal in GAO 1 of narrative 1. This indicates that the MLE resulted in a higher inclusion of goals in GAO 1 during narrative 2.

In the fourth grouping, it is clear that the inclusion of goals in GAO 2, 3, 4 and 5 was much lower than the inclusion of a goal in GAO 1. Participants only included a goal 27% of the time in GAO 2, 3, 4 and 5. The inclusion of a goal in GAO 2, 3, 4 and 5 was not influenced by the narrative, unlike the goals in GAO 1. To summarise, participants included more attempts and outcomes than goals in their narratives. Participants included fewer goals, particularly in GAO 2, 3, 4 and 5.

Another outcome of the CART is an importance score assigned to each of the predictable variables (see figure 4.3.6, below). The most important variable (element) is rated 1, and all the other variables are then rated relative to this one. This analysis enabled the researcher to determine which variables played a role in the score of 1 or 0 obtained for a goal, attempt or outcome.
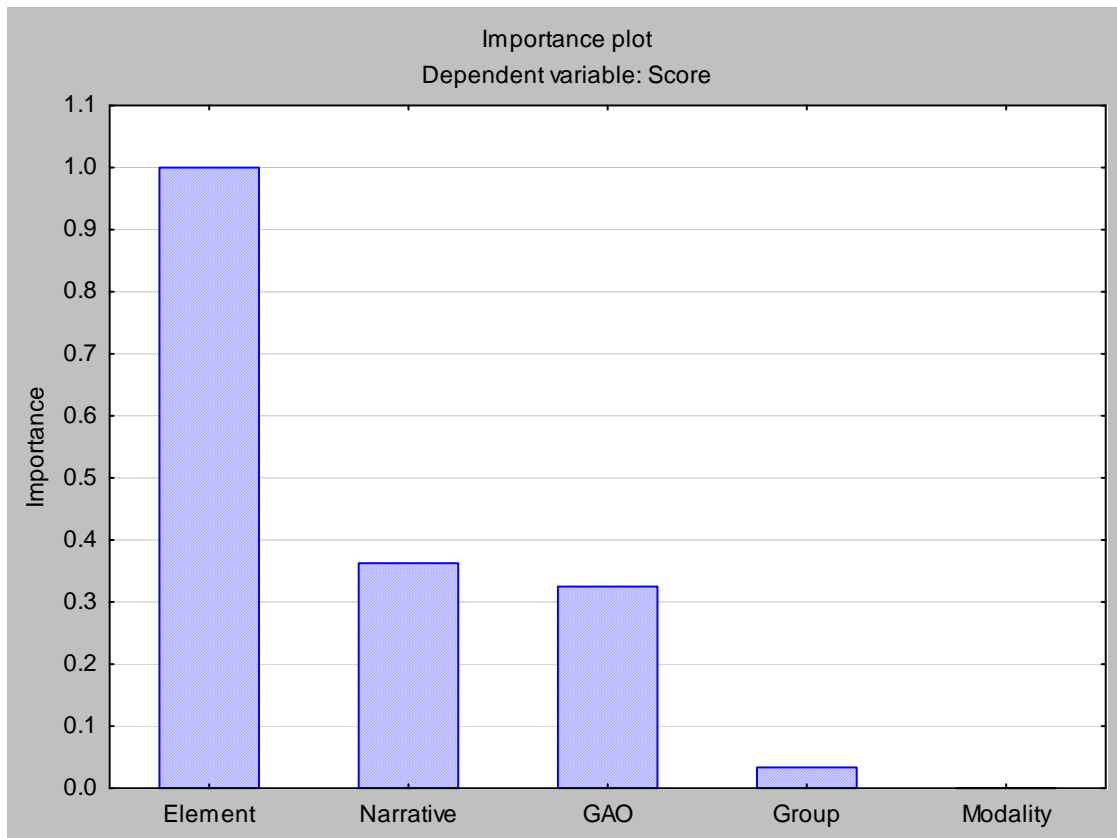
Figure 4.3.6: *Importance scores of the variables as determined by the CART analysis*

The results suggest that the element (goal, attempt or outcome) was the most important variable that influenced a score of 1 or 0 of an element for a participant. This means that the fact that the element was a goal, attempt or an outcome played a significant role in whether a score of 1 or 0 was achieved. The narrative and GAO sequence had less influence on the score obtained for an element. The group had a very low effect on the score obtained, and the modality had an extremely low effect on the score obtained. This suggests that the modality used does not influence the inclusion of goal, attempts or outcomes.

Therefore, the wordless picture book and animated video are equally effective with regards to the elicitation of the goals, attempts and outcomes in narratives of typically developing grade 3 children.

5.   GENERAL DISCUSSION

The main aims of this study were to determine if (1) a dynamic visual modality in the form of an animated video presentation would elicit better narratives than a static visual modality, in the form of a wordless picture book; and (2) if dynamic assessment in the form of mediated learning experiences would result in better narratives for both visual modalities.

This study can be seen as a pilot study investigating two new protocols - a wordless picture book and animated video, together with a dynamic assessment task. It was assumed that participants in this study had normal narrative development. Therefore, no in-depth analyses of narratives were performed. Participants were compared with themselves and the differences between their narratives in terms of micro- and macro-structural measures were investigated after exposure to the two visual modalities, and as a result of dynamic assessment.

In summary, the results of this study indicated, first, no significant difference in the quality of the narratives produced in response to the two visual modalities. Second, it was found that participants' narratives improved significantly as a result of mediated learning experiences (MLE) during the dynamic assessment (DA) procedures. However, during the animated video modality of group 1, participants' narratives showed an improvement, but the improvement was not significant (in terms of TNW, total number of T-units and total NDW).

The discussion of the micro- and macro-structural measures are presented in relation to the main research questions, namely: *"What is the effect of two different visual elicitation modalities, a wordless picture book and an animated video, on the narrative skills of Grade 3 children with typical language development?"* and *"Is there an improvement in participants' narrative skills as a result of mediated learning experiences in the form of focused questioning?"*

Firstly, the micro-structural measures will be discussed in terms of the visual modality differences and the effect of MLE during DA. Secondly, the macro-structural measures will be discussed in terms of the visual modality differences and the effect of MLE during DA.

5.1   MICRO-STRUCTURAL MEASURES

In this section the narratives elicited by means of the two visual modalities will be compared and discussed in terms of the micro-structural measures of interest.

Is there a difference in the micro-structural measures of narratives in response to a wordless picture book and an animated video?

5.1.1 Productivity and lexical diversity measures in terms of visual modality differences:

Productivity can be described as the length of a written or oral language sample (Justice et al., 2006; Scott & Windsor, 2000). Total number of words (TNW) and total number of utterances or T-units are well recognised measures of narrative productivity (Justice et al., 2006; Scott & Windsor, 2000). These measures have been used in previous studies investigating differences in narratives in response to different modalities and elicitation tasks (e.g. Gazella & Stockman, 2003; Morris-Friehe & Sanger, 1992; Schneider, 1996; Tönsing and Tesner, 1999) and to distinguish NDL children from children with LI (Liles et al., 1995; Scott & Windsor, 2000). Therefore, TNW and total number of T-units were included as measures of narrative productivity during this study.

Lexical diversity typically includes number of different words (NDW) and Type-token-ratio (TTR). NDW and TTR have been used to investigate children's narratives in response to different modality and elicitation tasks (e.g. Gazella & Stockman, 2003). Only NDW was used in this study as a lexical diversity measure describing the differences in vocabulary use in narratives, as research has shown it to be a more sensitive measure of lexical diversity than TTR and to distinguish children with LI (Klee, 1992; Watkins et al., 1995).

Overall, it was found that the visual modalities did not have an effect on the productivity or lexical diversity measures of narratives of typically developing 9 year old children. Both the wordless picture book and animated video elicited narratives of similar quality, in terms of productivity (TNW, number of T-units) and lexical diversity measures (NDW) that were investigated.

However, the presentation order of the modalities, in other words the modality that participants was exposed to during the first exposure session and then during the second exposure session, turned out to have a significant effect for productivity and lexical diversity measures (TNW, number of T-units and NDW). This finding was interpreted as an indication that learning and memory played a role in the results.

Participants seemed to remember the stories of the modality they were exposed to during the first exposure session, and as a result produced higher quality narratives (in terms of TNW, number of T-units and NDW) during the second exposure session, regardless of the mode of presentation during the first exposure session. This significant improvement in these measures in the second exposure session could have obscured the true modality effects. It may have been more appropriate to present a story with different content during the second exposure session (wordless picture book or animated video). Another factor that could have contributed to the improvement is the time lapse of only 2 weeks between the two exposure sessions. A longer time lapse between the two exposure sessions might have reduced the learning or carry-over of skills to the second exposure session.

The performances of the two groups (in terms of TNW, number of T-units and NDW) differed slightly. Group 1 (book-animation) showed a slightly more advanced performance in their first narratives during the first exposure session than group 2 (animation-book) in their first narratives during the first exposure session (in terms of TNW, number of T-units and NDW). Group 1 also displayed larger carry-over effects for these measures on their first narratives in the second exposure session. Group 1 also performed slightly better in their first narratives during the second exposure session, compared to the performance of group 2 in their first narratives in the second exposure session. The reasons for the slightly better performance of group 1 of their

first narrative productions during the first exposure session and second exposure session, may be due to two possible factors.

Firstly, there were inherent differences between the two groups' receptive language skills, despite the fact that participants were randomly allocated to the groups. Therefore, receptive language skills may have played a role. The ARWs standard scores, depicted in table 3.1, indicated that eight of the participants' scores were below 85. A standard score below 85 indicates a possible language deficit. However, the researcher felt that the study population resembled the general population in that they displayed a range of receptive vocabulary abilities. Therefore, participants with standard scores ranging from 77-177 were included in the study population.

Participants were randomly assigned to each group, but there were only two participants in group 1 with ARW standard scores below 85, compared to six participants in group 2 whose standard scores were below 85. It may be that group 1 performed slightly better in their first narrative productions (in terms of TNW, number of T-units and NDW) during the first exposure, because they had potentially more advanced language skills than participants in group 2. Group 1's slightly better performance (in terms of TNW, number of T-units and NDW) in their first narrative productions during the second exposure session, may also be as a result of their potentially more advanced language skills, and possible better memory skills, than group 2.

Secondly, results indicated that the first exposure to the wordless picture book resulted in slightly better narratives than first exposure to the animated video (in terms of TNW, number of T-units and NDW). This was in addition to the fact that group 1 showed slightly more advanced narrative performances than group 2 (in terms of TNW, number of T-units and NDW). The fact that group 1 was exposed to the wordless picture book during their first exposure session, may also have contributed to their slightly better performance. This may be due to the differences between the demands of each visual modality. The wordless picture book allowed participants to control the pace and provided the opportunity to look at the details of the pictures for as long as they needed, or until they felt that they understood a story event before moving on to the next event. They had more time to organise their thoughts or to

move on quicker if they preferred. In other words, participants could look at one event, for example, for a period of 3 seconds, and another event for 6 seconds, before turning over the pages of the book.

The animated video forced participants to look at events in a limited time period, and to move on to other events, even if previous events had not been fully understood or the details observed. The animated video was approximately 2 minutes long, which means that events followed quickly on each other, but also that events were spread out across time. Participants may have neglected to mention some of the events or descriptions in their story telling after exposure to the animated video, because they had forgotten some events, or they did not understand events correctly. Therefore they provided poorer descriptions during their story telling in the animated video presentation than in the wordless picture book presentation.

5.1.2 Syntactic complexity measures in terms of visual modality differences

The mean length of T-unit is a general measure of syntactic complexity and has been used to distinguish NDL children from children with LI (Liles et al., 1995; Scott & Windsor, 2000), as well as to compare narratives in response to different modalities (Schneider, 1996). During this study, the visual modalities did not have an effect on the syntactic complexity measures (mean length of T-unit (MLT)) of the narratives of typically developing 9 year old children. Both the wordless picture book and the animated video elicited narratives of similar quality, in terms of MLT that were investigated. Unlike the presentation order which had a significant effect on the productivity and lexical diversity measures, the MLT was not influenced by the presentation order of the visual modalities. Participants produced similar number of words per T-unit during each exposure session.

Does a MLE after narrative 1 result in higher micro-structural measures in narrative 2?

5.1.3 Productivity, syntactic complexity and lexical diversity measures in terms of the effect of DA

The goal of DA in the study was to assist participants in their optimal narrative performance. The test-teach-retest model was used as a DA approach. First, the participants told stories without any adult assistance, the researcher then provided assistance through mediated learning experiences (MLE) that consisted of a question-answer format. The goal of the MLE was to increase the participants' understanding and identification of the causal relations between story events, as well as to draw their attention to specific aspects of the story, such as the goals, attempts and outcomes depicted, and dialogue, emotions and thoughts of the characters. The participants were then expected to tell the stories again and their performances were compared to that in the first narrative productions.

Qualitative differences were found between participants' narratives from the first narrative production to the second narrative production after mediation. The adjustments that participants made in terms of the micro-structural measures, mirrored the specific aspects targeted during mediation. In the first narrative productions, participants, for instance, rarely included dialogue between characters. However, in the second narrative productions, participants provided richer descriptions of the story and generally commented more frequently on the characters' thoughts and emotional states, included dialogue between characters and provided names for the characters. Some participants included more mental and linguistic verbs (e.g. *besluit, sê, skel*), more emotional verbs (e.g. *ongelukkig*, *vies*) and more nouns and pronouns relating to characters (e.g. *man, mammavoël, sy "his", sy "haar"*) during the second narrative production.

The scores of the productivity, syntactic complexity and lexical diversity measures were significantly higher after mediation, except for three of the variables (TNW, total number of T-units and NDW), where there was a non-significant increase during the animation modality of group 1, in the second exposure session. Fatigue or

boredom during the second exposure session may have been the reason for only a slight increase of the three micro-structural measures after mediation in this session. Once again, if a different narrative was presented in the second exposure session, the children's performance may also have increased more significantly after mediation.

In general, the higher scores of productivity, syntactic complexity and lexical diversity measures found after mediation, correlate with previous research by Peña et al. (2006) in their investigation of the effects of DA on children's narratives. They investigated the effect of DA on narratives of children with LI and typically developing children, and also used MLE with the focus on increasing the length and complexity of children's narratives. However, their study was somewhat different to the current study. Their MLE comprised two mediation sessions, with more comprehensive methods than only focused questioning, in an effort to improve children's narratives. They also made use of a different story after mediation. However, Peña et al. (2006) investigated similar language measures, such as productivity (number of words and number of C-units), lexical diversity (number of different words) and syntactic complexity (mean length of utterances in words). The results of these measures, similar to the results of the measures in the current study, indicated that typically developing children and children with LI generally obtained higher scores in these language measures during the narrative productions after mediation. However, Peña et al. (2006) found that children with LI did not demonstrate the same high pre- to post-test gains as typically developing children.

5.2 MACRO-STRUCTURAL MEASURES

In this section, the narratives elicited by means of the two visual modalities will be compared and discussed in terms of the macro-structural measures of interest.

Is there a difference in the macro-structural measures of narratives in response to a wordless picture book and an animated video?

5.2.1 GAO sequences, inclusion of goals, attempts and outcomes in terms of visual modality differences

Narratives generally have several relations or connections in the story, for example, spatial, causal, temporal or referential relations (Hayward, Gillam & Lien, 2007). The production of the causal relations in a story can be particularly important indicators of children's ability to produce coherent narratives (Trabasso & Sperry, 1985). The causal connections or relations in a story can be represented by the GAO sequences (goals, attempts and outcomes) of a story and the presence of GAO sequences creates greater causal relations in a story (Trabasso & Sperry, 1985). Children who recognise and produce GAO sequences in narratives, produce more coherent and better organised narratives as well as recall more story information (Lorch et al., 2007; Trabasso et al., 1992; van den Broek et al., 1996). Due to the importance of these aspects in narrative production, GAO sequences and the elements *goals, attempts* and *outcomes* were included as measures of macro-structural analyses in this study.

In this study it was assumed that children would obtain higher scores for GAO sequences, and include more elements (goals, attempts and outcomes) in the animated video modality. This is due to the more apparent depiction of the causal relationships between events in the animation. The "movement" of characters and objects is better portrayed in the animation (Gazella & Stockman, 2003). Children were not required to make many inferences of actions, unlike still pictures of the book (Gibbons et al., 1986; Meringoff, 1980; Schneider & Dubé, 2005). However, no differences between the scores for the GAO sequences in the narratives produced after exposure to the different visual modalities, were found. Children obtained similar scores for the GAO sequences during the wordless picture book presentation and the animated video presentation.

Despite the fact that participants produced similar scores during each GAO sequence in the two visual modalities, it was found that some GAO sequences in both visual modalities, elicited more complete sequences than other GAO sequences. In other words, participants obtained a higher score out of 3 for some GAO sequences than others, meaning that they included more elements (goal, attempt or outcome) in some of their GAO sequences. It was noted that the scores for the more complete GAO sequences were mainly influenced by the inclusion or exclusion of goals. Participants included a high number of attempts and outcomes in all 5 of the GAO sequences, but considerably fewer goals in the GAO sequences. This finding concurs with previous research. According to Stein & Glenn (1979) the inclusion of story elements other than introduction of characters, actions and outcomes, only develops later in children's narratives, for example characters' goals. Griffith, Ripich, and Dastoli (1986) also found that school-aged children's recall of setting, initiating events and consequences are better than recall of internal responses or internal plans, feelings and goals of characters.

The differences between the scores for the different GAO sequences is now discussed. The first GAO sequence (GAO 1) elicited more goals, and as a result more complete GAO sequences than GAO sequence 3, 4 and 5. There are two possible reasons for this. Firstly, during GAO 1, participants were expected to relate what the children in the story were doing in the house, what the children wanted to do, and that the children went to play outside and the ball landed on the roof. It is possible that the pictorial content of the first GAO sequence portrayed the setting, initiating event, and the first goal, attempt and outcome of the story, very clearly and succinctly, resulting in more inclusion of goals and therefore more complete GAO sequences (see appendix C). Secondly, participants may have deemed it important to explicitly state the initiating event, including the characters' first goal of the story, to orientate the listener to the story.

In GAO 2, GAO 3, GAO 4 and GAO 5 it was noted that participants were much less likely to include goals in the GAO sequences. During the statements of goals in GAO 2, GAO 3, GAO 4 and GAO 5, according to the marking protocol, participants were expected to make similar statements relating to what the characters *wanted* to do. For example, in GAO 2, participants were expected to state what the children wanted to

do in order to get the ball off the roof (G), that they got a ladder (A)and then got the ball off the roof (O). Many of the participants only stated that the boy got a ladder and got the ball off the roof, thereby inferring the goal within their statement of the attempt. In GAO3, participants had to produce similar utterances to: the boy wanted to get the eggs (G), that he got the eggs (A) and he got hurt (O). Many of the participants only stated that the boy wanted to get the eggs and then directly after stated the outcome (the boy got hurt), thereby also inferring the goal within their statement of the attempt. According to the marking protocol, participants would then only receive a point for an attempt and an outcome, even if the goal was inferred in their statement of the attempt.

Similar to GAO3, during GAO 4, participants had to make utterances similar to: what the mother bird *wanted* to do (G), and in GAO 5: that the children's mother *wanted* to help the boy (G). Once again, many of the participants achieved a score of 0 for inclusion of a goal, because the goal was not explicitly stated. The conclusion is that participants did not state goals explicitly in the majority of GAO sequences 3, 4 and 5, and generally inferred the goals during their statements of the attempts. As a result, according to the marking protocol, they then achieved a score of 0 for inclusion of goals in these GAO sequences.

The inclusion of goals in the GAO sequences required according to the marking protocol was low. However, the number of goals produced for each visual modality was similar. The frequency of attempts and outcomes included in participants' narratives were also similar for each visual modality, but higher than the frequency of goals.

In this study, there may be two reasons why children did not include a high amount of goals in their narratives. Firstly, participants were only credited for the explicit statements of goals, and obtained scores of 0 if the goal of the character was merely implied. Previous research has shown that children are less likely than adults to include explicit statements of internal responses, internal plans and reactions, which often include characters' goals, in their recall of narratives. This only starts occurring in narratives of 9 year old children and older, and even then goals are not always explicitly stated (Merritt & Liles, 1987, 1989; Ripich & Griffith, 1988; Stein &

Glenn, 1979; Trabasso & Nickels, 1992; van den Broek et al., 1996). The results of statement of goals therefore confirm the findings of previous research. It can be concluded that participants may have omitted statements of goals or motivations, because they assumed that the goals could be inferred from their explicit statement of actions or attempts.

The second reason for the low inclusion of goals is because research has shown that visually presented stories tend to result in exclusion of character's internal responses and intentions (i.e. goals) (Griffith et al., 1986). This may be because goals cannot be visually depicted and are generally implied or associated with thoughts or dialogue of characters (van den Broek et al., 1996). The pictures in the wordless picture book and animated video without audio input or dialogue of the characters, contributed to the lack of explicit statements of characters' goals, resulting in fewer goals in the participants' narratives.

Although children were more likely to include attempts and outcomes in their GAO sequences than goals, the similar amount of attempts (actions) for each visual modality was especially interesting. This finding contradicts previous research which found that recall of actions, which are generally characters' attempts, is significantly higher in more dynamic visual presentations such as animations (Meringoff, 1980; Sharp et al., 1995). A possible reason for the similar number of attempts included for both modalities of this study, is that the animated video may not have been "animated" or dynamic enough in portraying the actions (movements of characters and objects) more noticeably than the static pictures of the wordless picture book. The animated video was based on the pictures of the wordless picture book, but the movements of the characters and objects in the animated video were not as flowing and "moving" as participants may have expected.

Previous research has shown that stories presented via pictures, such as wordless picture books, require children to mentally translate the "actions" of the pictures, because moving actions cannot be shown in the pictures (Gazella & Stockman, 2003; Sharp et al., 1995). The requirement of visualising actions from still pictures results in less inclusion of actions in narratives compared to narratives in response to dynamic visual presentations such as animations (Meringoff, 1980). However, the wordless

picture book in this study contained more than enough pictures, 15 pictures in total (see Appendix C) portraying the story events. Participants were required to make minimal inferences with regards to actions or attempts of characters not depicted in the pictures. This factor may have contributed to the similar number of attempts produced in both modalities.

Does a MLE after narrative 1 result in higher macro-structural measures in narrative 2?

5.2.2 GAO sequences and inclusion of goals, attempts and outcomes in terms of the effects of DA

The scores for the GAO sequences were significantly higher after mediation. In other words, participants included more elements (goal, attempt or outcome) in their narratives after the MLE, except for GAO 1 and GAO 5, during the wordless picture book modality of the group 2 (animation-book), in which no significant differences were found after mediation. The reason for these insignificant differences may be attributed to the role of boredom, given that these results occurred in group 2's second exposure session during the wordless picture book. This meant that the children had already told the story in the first session in response to the animated video. Participants may have felt that they did not need to elaborate in detail again on the character's goals, attempts and outcomes during their second narrative in response to the wordless picture book in the second exposure.

Peña et al. (2006) investigated children's performance gain in story components amongst other macro-structural variables after mediation. The story components included setting (time and places), character information, causal relationships, and temporal order of events. In this study, the increase in the scores for the GAO sequences, or in other words the causal relations after mediation, correlate with the results of Peña et al. (2006), who also found an increase after mediation in story components like causal relationships of the story.

In terms of the inclusion of goals in the GAO sequences, it was found that there was a significantly higher inclusion of goals in narratives after mediation. However, although the inclusion of goals increased significantly after mediation, the inclusion of goals was still not as high as the inclusion of attempts and outcomes. Out of the 5 possible goals that children could have included, not one of the participants achieved a score of 5/5 in their first narratives, and only three participants of the study obtained a score of 5/5 in their narratives in their second narratives. This indicates that, despite the MLE, where the researcher specifically aimed to draw participant's attention to the characters' goals and prompted them to answer questions about the character's goals, participants still did not include all the goals of the story in their second narratives.

According to Freer (2008) and Flory et al. (2006), goals are generally best recalled, because they contain the highest degree of causal connections or relations. In other words, goals are connected to many antecedents and consequences throughout a story. The fact that participants of this study, with typical language development, did not include all the goals, even after focused questioning during the MLE, contradicts Freer (2008) and Flory et al. (2006). The reason for the still low inclusion of goals after mediation, even if the increase from narrative 1 to narrative 2 was significant, needs further investigation.

One of the possible reasons for the lower transfer of goals (compared to attempts and outcomes) to narratives after mediation, is the format of the focused questions during the MLE with regards to goals. This may need to be more refined and more prominent, in order for children to realise the importance of the inclusion of goals in the narratives. The focused questions in this study aimed at tapping children's knowledge about the characters' goals, focused on asking what the characters wanted to do, or what the character was thinking about or thinking about doing. Additional questions with the focus on the reasons for the characters' intentions may result in more inclusion of goals. For example, in GAO 1, the focused questions with regards to the characters' goal were *"Wat dink hulle?"* and *"Wat wil hulle doen?"*. An additional question *"Hoekom wil hulle dit doen?"* after the previous questions may make children even more aware of the characters' goal. This leads to the second possible reason for the lower transfer of goals to narratives after mediation.

In earlier discussion of the inclusion of goals in GAO sequences, the conclusion was made that participants often make use of implied goals in their statements of attempts. It was apparent that participants in this study could easily answer all the questions during the MLE aimed at revealing the goals of the characters. This means that they understood the goals, but still failed to mention the majority of goals in their narratives after mediation. This indicates that participants still made use of implied goals, even after mediation.

The above results have implications for narrative assessment. It may be unrealistic to expect explicit verbalisation of all the goals of a story, especially when it was determined that the children understood and verbalise the goals during MLE. The marking protocol may also need to be less strict, especially with older children, as older children may not always explicitly state goals in their narratives (Merritt & Liles, 1987, 1989; Ripich & Griffith, 1988; Stein & Glenn, 1979; Trabasso & Nickels, 1992; van den Broek et al., 1996). Children can thus be judged as being competent in comprehension and expression of goals if they can answer goal-related questions and include only 1 or 2 goals in their narratives.

The inclusion of attempts was higher in all the narratives produced after mediation. However, in group 1 the difference was significant, but not in group 2. The conclusion can be made that children in group 2 (animation-book) did not benefit significantly from mediation in terms of inclusion of attempts.

All children included significantly more outcomes in their narratives after mediation. However, it was found that, in general, group 2 included significantly less outcomes than group 1. Once again, the possible poorer language skills of children in group 2 may be responsible for the poorer performance in terms of less inclusion of attempts and outcomes after mediation than group 1.

Summary of modality differences and dynamic assessment

Children produced comparable narratives in response to both visual modalities. The similar performances for micro- and macro-structural measures may be because older children are less influenced by the elicitation modality (visual, audio, audio-visual)

and require less visual support when telling stories (Pearce, 2003; Schneider & Dubé, 1997). The carry-over effects from the first to the second exposure sessions with some of the measures, may have obscured the differences in the two modalities that may exist. The use of a different narrative in the second exposure sessions may have resulted in differences in narratives as a result of visual modalities.

An important question is whether the results of the type of dynamic assessment task used in this study can assist clinicians in more accurate assessment of children's narratives. The results of this study indicate that DA, in the form of focused questioning, is effective in enhancing children's narrative performance. The participants were highly responsive to the MLE and were able to adjust their narrative production accordingly. Furthermore, the dynamic assessment procedure in this study indicates that children's performance can be enhanced when they understand the demands of the narrative task, as children may not be aware of what is expected of them during narrative tasks. DA and MLE may therefore result in narratives that are more representative of a child's true narrative abilities.

The results of this study also provide insight into the assessment of school-aged children's narratives. Previous research has shown that DA of narratives is a more effective and accurate than once-off assessments for describing children's narrative competence, and distinguishing typical developing children from children with LI (Pena et al., 2006). These authors indicated that typically developing children demonstrate a higher increase in narrative measures from pre- to post-tests, and children with LI only show minimal increase from pre- to post-tests. The participants in this study were mainstream learners without severe language impairments. Their performances after MLE were significantly higher for most micro- and macro-structural measures, indicating that they were highly modifiable, as may be expected from typically developing children. Replication of this study on children of the same age, but with LI, may provide insight into the effectiveness of this MLE (focused questioning) on narrative performances of children with LI. Insights gained from using this form of DA can assist clinicians in determining children's learning potential, as well as in establishing possible goals for narrative intervention.

General findings

It was noted that some participants made use of physical actions and gestures when telling the story after the animated video presentation (e.g. showing how the boy fell off the ladder, touching their elbows to indicate where they boy hurt his arm and where the bandage was put on). This concurs with Meringoff (1980), who also found that children tend to use physical gestures to illustrate their verbal retelling in response to a television story. A possible reason for the use of more gestures to indicate actions, is that the animated video portrayed the actions of the story in motion, and was thus possibly more memorable.

Another interesting finding is that out of the 29 participants, only 2 gave specific names to the characters of their stories in the wordless picture book and animated video. It may be that the children did not consider it important to provide names for the characters. There are two possible reasons for this. Firstly, children may have assumed that the researcher knew who they referred to if they only said "seuntjie", "dogtertjie" or "mamma", because the researcher also saw the pictures of the characters in the wordless picture book and animated video. Secondly, children may have failed to provide names for the characters, because the tasks in this study required their own story generations and no character names were provided first through verbal stories (audio-input). This concurs with Baggett (1979), who found that adults use more specific labels for characters after an audio presented story, and fewer specific labels after a visually presented story. Therefore, it can be concluded that 9 year old children are unlikely to provide names for characters of a story, when no audio rendition of the story is provided.

5.3   LIMITATIONS AND FUTURE DIRECTIONS

Visual modalities and task conditions

Children may associate video animations with accompanying verbal or auditory input. It may be that children expect dynamic story presentations, like an animated video, to provide character's thoughts and utterances - in other words, accompanying audio input. This associated audio-visual modality of animated videos was also observed in

this study. Many participants had difficulty making inferences regarding characters' thoughts and utterances during the animated video presentation. Many participants stated, in response to the focused questioning, that they were unable to do so because there was no audio support accompanying the animated video. However, it was observed that participants were more able to make use of their own experience and world knowledge (knowledge of people, social interactions and events) to infer characters' thoughts and utterances during the wordless picture book presentation. This concurs with Meringoff (1980), who found that children make use of outside story knowledge (non-visual cues) to make inferences about characters in response to a wordless picture book presentation. Wordless picture books may prompt children to use more "imaginative" language and encourage them to make use of their own experiences and knowledge to make inferences about utterances and events. Video animations may be less effective in eliciting children's own knowledge, because the children may expect all the details of the story to be given to them.

In this study, the same story content and similar visual portrayal of the story were used in both visual modalities. In other words, the pictures of the wordless picture book and animated video were the same story, but the pictures of the wordless picture book were static, and the animated video's events were in motion. This study showed that a carry-over effect of some of the language measures occurred from the first to the second exposure sessions. It was also observed that some participants complained when they had to tell the same story twice, even when the visual modalities were different. Due to the carry-over effect of some measures and possible boredom, the use of the same story content in both modalities may not have been truly effective in assessing the differences in the quality of the narratives, in response to a wordless picture book and animation. A possible solution may be to use a different story with the same amount of GAO sequences, but with different content (different pictures), in one of the modalities to help avoid carry-over of skills, and to sustain ongoing interest in the story telling activities.

The occurrence of carry-over of some measures to the second exposure sessions may be due to the time lapse of only 2 weeks between the exposures to the different modalities. A bigger time lapse between the two exposure sessions may have contributed to more significant differences in the performances of the two modalities.

Participants may have remembered less of the story content and carry-over of measures may have been smaller. This in turn, could have resulted a more accurate description of the differences between the two visual modalities.

The type of animated video designed for this study, may not have been complex enough and representative of the dynamic visual presentations with audible dialogue and audio effects, that 9 year old children are used to on television. There are two reasons associated with this assertion. Firstly, creating advanced digital three-dimensional animations is costly. Due to the limited financial resources available, the technical quality of the animated video was not as advanced as animations regularly seen on television. For example, when the characters were walking, they almost seemed to be floating in the air instead, and when they were speaking, their mouths merely flickered by appearing and disappearing. Some of the children commented that some of the actions and movements in the animated video looked fake or unreal.

Creation of a more advanced, higher quality animated video, may contribute to more significant differences in the narrative measures of the two visual modalities. Secondly, animations seen on television are mostly, if not always, accompanied by audio input (character's dialogue, background music or sounds). As mentioned previously, participants found it difficult to describe the story characters' thoughts and utterances, especially during the animated video presentation, because there was no audio input. It may be valuable to repeat this study with a wordless picture book and animated video with accompanying audio input. This could provide insight into the recall of aspects like characters' names and dialogue, as well as more specific event descriptions.

In the current study, the dynamic assessment procedure alone may not have been responsible for the change in the children's narrative performance. During the first narrative productions, the researcher that presented the story modalities to the children was present, but during the second narrative productions a naive listener was present. The presence of the researcher in the first narrative may have influenced the children's assumption about the nature of the narrative task, as well as the researcher's knowledge of the context and content of the narrative. Children may have produced narratives of lesser quality in the first narrative productions because

information was shared with the researcher who could also see the pictures or animation (Liles, 1985; Ripich & Griffith, 1988; Trabasso et al., 1992).

Children tell longer and more cohesive and coherent narratives to a naive listener (Liles, 1985, 1987). Children in this study may have been more aware of the listener's needs during the second narrative productions, because the naïve listener did not see the visual modalities beforehand, unlike the researcher during the first narrative productions, and as a result they provided more complex and cohesive narratives. Therefore, the naive listener in the second narrative productions, together with the dynamic assessment procedure, could have influenced the results in the second narrative. The use of a naive listener after mediation could have contributed to a degree of a false-positive effect for dynamic assessment. Replication of this study with the same person present in the story telling before and after mediation, could determine if a naive listener plays a role in the results after mediation.

The marking protocol used in this study during assessment of GAO sequences in narratives, may require adjustments. Participants in this study only received a score of 1 for an element (goal, attempt or outcome), if the element was explicitly stated. The results of this study indicated that participants do not always explicitly state all the elements, specifically goals, of the GAO sequences in their narratives. The marking protocol can be adapted to be less strict in only scoring explicit statements of goals. Providing scores for implied goals in GAO sequences can offer a more accurate description of a child's production of goals.

The choice of focused questions used during the MLE may also require some adjustment. This study suggests that children had specific difficulty with certain macro-structural measures (inclusion of goals). One of the aims of the focused questioning was to specifically draw children's attention to goals of characters. It was found that children had difficulty including goals 2, 3, 4 and 5 of the story. Focused questions regarding goals, specifically goals 2, 3, 4 and 5 of the story, may need to be adapted with more emphasis placed on those goal structures, in an attempt to better elicit those goals in children's narratives. As mentioned earlier, inclusion of additional questions with regards to the *reason* for characters' goals, may aid children in the awareness of the importance of characters' goals.

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The pictures used in the wordless picture book and animated video were designed to visually portray the GAO sequences of the story. However, from the results, it is evident that the pictorial content of the story may not have rendered the portrayal of some of the elements of the GAO sequences. Therefore, the pictorial content of the wordless picture book and animated video could be modified, specifically with regard to the goals of GAO sequences 2. 3, 4 and 5. The pictures of goal 2 (the boy wanted to get the ball off the roof), goal 3 (the boy wanted to take the eggs), goal 4 (the mother bird wanted to protect her eggs) and goal 5 (mother wanted to take the boy to the hospital), can be improved by, for example, making speech bubbles above the characters' heads, or creating new pictures specifically indicating what the characters were thinking, i.e. what their goals were.

The focus of this study was the comparison of story generations in response to two different visual elicitation modalities of fictional stories. Previous studies have indicated that a variety of narrative tasks and presentation types should be used in assessment in order to obtain representative narrative samples of children (Morris-Friehe & Sanger, 1992; Schneider & Dubé, 2005). Story retelling tasks have shown to result in longer and more complete narratives than story generations (Merritt & Liles, 1989; Ripich & Griffith, 1988). Story retelling tasks also allow for the assessment of the ability to retrieve recent information and content (Pearce, 2006), and linguistic structuring of a narrative (Gazella & Stockman, 2003). On the other hand, some researchers encourage the use of personal narratives over fictional narratives in assessment, because they reflect a natural form of discourse used in daily social interactions (Hudson & Shapiro, 1991; McCabe et al., 2008). Therefore, it may be useful to combine the elicitation tasks in this study with a retelling task and personal narrative with the same topic, in order to obtain more comprehensive and representative samples of children's language productivity and narrative skills.

Sample selection and size

The small sample size of this study population was a limitation. A larger sample may elicit more significant statistical differences between the visual modalities, and allow for more accurate generalisation of the results to the target population of typically developing 9 year old children.

Only Grade 3 children were used in this study. Future research on younger and older children could be beneficial in determination of the developmental order of narratives in response to these two visual modalities and task conditions. It would be particularly interesting to replicate this study on younger children. Younger children are more affected by the inclusion of a visual modality (Gibbons et al., 1986) than older children. Therefore, more significant differences may be found in younger children's narrative performance in response to the wordless picture book and animated video. Participants in this study complained when they had to tell the same story again during the second exposure session, indicating that they remembered the story of the first exposure session. Younger children may show ongoing interest in the story telling activities and the pictorial content, and the carry-over of skills may be less.

Participants in this study attended a primary school where story-telling was a common cultural experience. The parents and children concerned were also from a higher socio-economic status background. It would be valuable to replicate this study in populations with different cultural and socio-economic backgrounds, as well as in children with language delays or impairments. This will assist in enhancing the applicability of the results of this study, as well the effectiveness of the application of these visual modalities and dynamic assessment tasks on all children.

The visual modalities and dynamic assessment tasks in the current study were designed by the researcher and are not standardised on any population of children. The results of the modality presentations and dynamic assessment tasks used need to be replicated by other researchers on different populations, before firm conclusions about the effectiveness of the visual modalities and the specific form of dynamic assessment used can be drawn.

5.4   CLINICAL IMPLICATIONS

The results of this study have several implications for narrative assessment practices. During narrative assessment tasks, children may be judged incorrectly on their narrative competence due to poor selection of the appropriate narrative stimulus, and due to a static once-off approach of assessment, which may not reflect the child's true abilities.

The results of this study indicated that two different visual modalities (wordless picture book and animation) produce narratives of equal quality. This leaves the clinician with the decision of choosing between the two modalities for narrative assessment. While the animated video may be more appropriate for assessment of children's narratives, as most children watch this form of visual modality on a daily basis (Rideout, Foehr & Roberts, 2010), it may not be the most functional modality for clinical use. A wordless picture book seems preferable to an animated video for the following reasons:

Firstly, in the South African context, it may be more efficient to use a wordless picture book because the construction of a soundless animation is a task that requires time, money and resources, which may be beyond most clinicians. Aspects that must be kept in mind are the availability of equipment, like a television, computer or form of visual screen to play the animation, and the availability of electricity. Secondly, the duration of the animation may also be more time consuming than paging through a picture book. The duration of an animation is also fixed, whereas the duration of the wordless picture book can be altered as required in each clinical situation. Therefore, the use of wordless picture books is recommended in narrative assessments, because it is more practical, affordable, accessible, easily transportable, and may be less time consuming than animations. In South Africa, the use of a wordless picture book is also a more realistic method of narrative assessment, as it may be easier to find books to use in narrative assessment of the different language and multi-cultural populations.

During narrative elicitation of children, it is important to select an appropriate stimulus, i.e. an elicitation task - and if necessary a visual modality - that is age appropriate and would elicit the most complex narrative of a child. Younger children may be more affected by a visual modality (Gibbons et al., 1986) and may benefit from the provision of a narrative structure in the form of pictures or animation (Pearce, 2003). Older children may require less visual support and may even be constrained from telling elaborate, complex stories when sequenced pictures or animations are provided (Pearce, 2003). Children in this study who lost interest in the tasks and the pictures, may have constrained their story telling abilities. Therefore, the visual modalities used in this study may be more appropriate and effective on younger children.

The findings of this study provide information with regards to children's production of GAO sequences in their narratives, specifically the inclusion of the elements (goal, attempt and outcomes). This study showed that the inclusion of goals in 9 year old children's narratives is much lower than the inclusion of attempts and outcomes. This provides a guideline for the clinician in scoring of goals in narratives of children. The results of this study suggest that children do not make explicit statements of every goal, and some goals are merely implied by stating the attempt of the goal. Therefore, clinicians assessing children's narratives based on the inclusion of goals, attempts and outcomes in GAO sequences, must be careful about making judgments of children's abilities to include goals in their narratives. The findings of this study also suggest that older children may be judged as being competent in comprehension and expression of goals, even if only 1 or 2 goals are produced in a narrative.

The results of this study also indicate that children's narrative performance can be changed with a short-term instruction phase. Narratives became longer, more complex and contained more causal relational elements. Clinicians are often faced with making diagnostic decisions regarding children's narrative abilities based on a single score or sum of scores at one point in time. Dynamic assessment is more time-consuming compared to other once-off assessments. However, clinicians must consider using this type of language and narrative assessment in their assessment practices, because of the advantages it confers. During MLE of dynamic assessment, clinicians can gain information regarding the child's reasoning and problem solving skills, question answering and attention skills (Peña et al., 2006). Through dynamic assessment, clinicians can also gain information assisting them in more reliable diagnostic decision making regarding a children's narrative and language abilities. Goals for intervention, including the amount and type of intervention required, can also be determined (Peña et al., 2006).

South African clinicians should consider the application of dynamic assessment of children's narratives. South African clinicians are often faced with children from diverse cultural backgrounds who may be misdiagnosed as children with LI due to their narrative performance, when in fact difficulties may only relate to language differences. This form of dynamic assessment of narratives can assist clinicians in

accurately diagnosing children with language impairments and children with language differences (Pena et al., 2006).

5.5   CONCLUSION

The main aims of this study were to determine which visual modality (wordless picture book or animated video) would elicit higher quality narratives in typically developing 9 year old children, and if dynamic assessment in the form of a mediated learning experience would result in higher quality narratives for both visual modality presentations.

The results of this study indicated no significant differences between wordless picture book and animated video in terms of micro- and macro-structural measures. Therefore, it can be concluded that either of the two modalities can be used equally effectively, as elicitation methods of typically developing 9 year old children's narrative production. However, it is simpler, takes less effort and is more cost effective to use wordless picture books in the South African context, than to use animations.

The results of this study further indicate that dynamic assessment in the form of focused questioning had a significant effect on children's narrative performance. Typically developing 9 year old children performed higher after mediation, indicating that first narrative elicitations may not have tapped their full potential of narrative production. Previous research has indicated that narrative analyses appear to be a better assessment tool after mediation than before mediation. In other words, the differences in children's narrative performance before mediation did not always differentiate between typically developing children and children with LI. Comparison of children's performance, before and after mediation, and determination of the degree of change in performance, can assist in the more accurate diagnosis of possible language or narrative disorders.

REFERENCES

Allen, M. S., Kertoy, M. K., Sherblom, J. C. & Petit, J. M. (1994). Children's narrative productions: A comparison of personal event and fictional stories. *Applied Psycholinguistics, 15,* 149-176.

Applebee, A. (1978). *The child's concept of story.* Chicago: University of Chicago Press.

Baggett, P. (1979). Structurally equivalent stories in movie and text and the effect of medium on recall. *Journal of Verbal Learning and Verbal Behavior, 18,* 333-356.

Beagles-Roos, J. & Gat, I. (1983). The specific impact of radio and television on children's story comprehension. *Journal of Educational Psychology, 75,* 128-137.

Berman, R. A. & Slobin, D. I. (1994). *Relating events in narrative. A crosslinguistic developmental study.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Bernstein, D. K. & Tiegerman-Faber, E. (2002). *Language and communication disorders in children* (5th ed.). Boston: A Pearson Education Company.

Bishop, D. V. M. & Edmundson, A. (1987). Language-impaired 4-year-olds: Distinguishing transient from persistent impairment. *Journal of Speech and Hearing Disorders, 52*, 156-173.

Botting, N. (2002). Narrative as a tool for the assessment of linguistic and pragmatic impairments. *Child Language Teaching and Therapy, 18 (1),* 1-21.

Buitendag, M. M. (1994). *Afrikaanse Reseptiewe Woordeskattoets* (ARW). Pretoria: Raad vir Geesteswetenskaplike Navorsing.

Cain, K. & Oakhill, J. (1996). The nature of the relationship between comprehension skill and the ability to tell a story. *British Journal of Developmental Psychology, 14,* 187-201.

Cameron, D. (2001) *Working with spoken discourse.* London: Sage. Retrieved June 5, 2010, from http://www.coastaluniversity.edu/younggen.

Crais, E. R. & Lorch, M. S. (1994). Oral narratives in school-age children. *Topics in Language Disorders, 14 (3),* 13-28.

Culatta, B., Page, J. & Ellis, J. (1983). Story retelling as a communicative performance screening tool. *Language, Speech, and Hearing Services in Schools, 14,* 66-74.

Cumming, A. & Berwick, R. (1996). *Validation in language testing*. Cleveland: Multilingual Matters Ltd.

Curenton, S. M. & Justice, L. M. (2004). African American and Caucasian preschoolers' use of decontextualized language: Literate language features in oral narratives. *Language, Speech, and Hearing Services in Schools, 35,* 240-253.

Dolloghan, C., Campbell, T. & Tomlin, R. (1990). Video narration as a language sampling context. *Journal of Speech and Hearing Disorders, 55 (3),* 582-590.

Eisenberg, S. L, Ukrainetz, T. A., Hsu, J. R., Kaderavek, J. N., Justice, L. M. & Gillam, R. B. (2008). Noun phrase elaboration in children's spoken stories. *Language, Speech, and Hearing Services in Schools, 39 (2),* 145-157.

Engelbrecht, L. (2007). *Die invloed van 3 verskillende verbale ontlokkingsmetodes gekombineer met visuele stimuli, by normaal ontwikkelende Graad 3 leerders se narratiewe.* Unpublished under-graduate research report. Stellenbosch: University of Stellenbosch.

Fey, M. E., Catts, H. W., Proctor-Williams, K., Tomblin, J. B. & Zhang, X. (2004). Oral and written story composition skills of children with language impairment. *Journal of Speech, Language, and Hearing Research, 47 (6),* 1301-1318.

Flory, K., Milich, R., Lorch, E. P., Hayden, A. N., Strange, C. & Welsh, R. (2006). Online story comprehension among children with ADHD: Which core deficits are involved? *Journal of Abnormal Child Psychology, 34,* 853-865.

Freer, B. D. (2008). *The effectiveness of formulating a story representation among children with attention deficit hyperactivity disorder and comparison children.* Unpublished Master's thesis. University of Kentucky, Lexington, KY.

Gardner, M. (1990). *Expressive one-word picture vocabulary test-revised.* Notavo, CA: Academic Therapy Publications.

Gazella, J. & Stockman, I. J. (2003). Children's story retelling under different modality and task conditions: Implications for standardizing language sampling procedures. *American Journal of Speech-Language Pathology, 12,* 61-72.

Gibbons, J., Anderson, D. R., Smith, R., Field, D. E. & Fischer, C. (1986). Young children's recall and reconstruction of auditory and audiovisual narratives. *Child Development, 57,* 1014-1023.

Gillam, R. B. & Pearson, N. A. (2004). *Test of narrative language.* Austin, TX: Pro-Ed.

Gillam, R. B., Peña, E. & Miller, L. (1999). Dynamic assessment of narrative and expository discourse. *Topics in Language Disorders, 20 (1),* 33-47.

Greenhalgh, K. S. & Strong, C. J. (2001). Literate language features in spoken narratives of children with typical language and children with language impairments. *Language, Speech, and Hearing Services in Schools, 32 (2),* 114-125.

Griffith, P. L., Ripich, D. N., & Dastoli, S. L. (1986). Story structure, cohesion, and propositions in story recalls by learning-disabled and nondisabled children. *Journal of Psycholinguistic Research*, *15 (6),* 539-555.

Gutierrez-Clellen, V. F. & Iglesias, A. (1992). Causal coherence in the oral narratives of Spanish-speaking children. *Journal of Speech and Hearing Research, 35,* 363-372.

Gutierrez-Clellen, V. F. & Peña, E. (2001). Dynamic assessment of diverse children: A tutorial. *Language, Speech, and Hearing Services in Schools, 32,* 212-224.

Gutierrez-Clellen, V. F., Peña, E. & Quinn, R. (1995). Accommodating cultural differences in narrative style: A multicultural perspective. *Topics in Language Disorders, 15 (4),* 54-67.

Gutierrez-Clellen, V. F. & Quinn, R. (1993). Assessing narratives of children from diverse cultural/linguistic groups. *Language, Speech, and Hearing Services in Schools, 24,* 2-9.

Gummersall, D. M. & Strong, C. J. (1999). Assessment of complex sentence production in a narrative context. *Language, Speech, & Hearing Services in Schools, 30 (2),* 152-164.

Hadley, P. A. (1998). Language sampling protocols for eliciting text-level discourse. *Language, Speech and Hearing Services in Schools, 29,* 132-147.

Hayes, D. S., Kelly, S. B. & Mandel, M. (1986). Media differences in children's story synopses: Radio and television contrasted. *Journal of Educational Psychology, 78 (5),* 341-346.

Hayward, D. V., Gillam, R. B. & Lien, P. (2007). Retelling a script-based story: Do children with and without language impairments focus on script and story elements? *American Journal of Speech-Language Pathology, 16,* 235-245.

Hayward, D. & Schneider, P. (2000). Effectiveness of teaching story grammar knowledge to pre-school children with language impairment. An exploratory study. *Child Language Teaching and Therapy, 16,* 255-284.

Heath, S. B. (1986). Taking a cross-cultural look at narratives. *Topics in Language Disorders, 7 (1),* 84-94.

Henshilwood, L. & Ogilvy, D. (1999). Narrative discourse productions in older language impaired learning disabled children: Employing stricter reliability measures. *South African Journal of Communication Disorders, 46,* 45-53.

Hewitt, L. E. & Duchan, J. F. (1995). Subjectivity in children's fictional narratives. *Topics in Language Disorders, 15 (4),* 1-15.

Hoff, E. & Tian, C. (2005). Socioeconomic status and cultural influences on language. *Journal of Communication Disorders, 38 (4),* 271-278.

Hoffman, L. M. (2009). The utility of school-age narrative microstructure indices: INMIS and the proportion of restricted utterances. *Language, Speech and Hearing Services in Schools, 40,* 365-375.

Hudson, J. A. & Shapiro, L. R. (1991). From knowing to telling: The development of children's scripts, stories, and personal narratives. In Peterson, C. & McCabe, A. (1991) (Eds.). *Developing narrative structure.* Hillsdale, N.J: Lawrence Erlbaum Associates Publishers.

Johnson, C. J. (1995). Expanding norms for narration. *Language, Speech, and Hearing Services in Schools, 26,* 326-341.

Johnston, J. R. (2008). Narratives: Twenty-five years later. *Topics in Language Disorders, 28 (2),* 93-98.

Justice, L. M., Bowles, R. P., Kaderavek, J. N., Ukrainetz, T. A., Eisenberg, S. L., Gillam, R. B. (2006). The index of narrative microstructure: A clinical tool for analyzing school-age children's narrative performances. *American Journal of Speech-Language Pathology, 15 (2)*, 177-191.

Kaderavek, J. N., Gillam, R. B., Ukrainetz, T. A., Justice, L. M. & Eisenberg, S. N. (2004). School-age children's self-assessment of oral narrative production. *Communication Disorders Quarterly, 26 (1),* 37-48.

Kaderavek, J. N. & Sulzby, E. (2000). Narrative production by children with and without specific language impairment: Oral narratives and emergent readings. *Journal of Speech, Language, and Hearing Research, 43 (1),* 34-49.

Katz, J. (1994). *Handbook of clinical audiology* (4th ed.). Baltimore: Williams & Wilkins.

Khoury, S. H. (2008). What is discourse? *Discourse & Misunderstanding.* Retrieved August 4, 2010, from http://discourse-analysis.webs.com/whatisdiscourse.htm.

Klee, T. (1992). Development and diagnostic characteristics of quantitative measures of children's language production. *Topics in Language Disorders, 12 (2),* 28-41.

Kramer, K., Mallett, P., Schneider, P. & Hayward, D. (2009). Dynamic assessment of narratives with Grade 3 children in a first nations community. *Canadian Journal of Speech-Language Pathology and Audiology, 33 (3),* 119-128.

Labov, W. (1972). *Language in the inner city.* Philadelphia: University of Pennsylvania Press.

Laing, S. P. & Kamhi, A. (2003). Alternative assessment of language and literacy in culturally and linguistically diverse populations. *Language, Speech, and Hearing Services in Schools, 34,* 44-55.

Liles, B. Z. (1985). Cohesion in the narratives of normal and language-disordered children. *Journal of Speech and Hearing Research, 28,* 123-133.

Liles, B. Z. (1987). Episode organization and cohesive conjunctives in narratives of children with and without language disorder. *Journal of Speech and Hearing Research, 30,* 185-196.

Liles, B. Z., (1993). Narrative discourse in children with language disorders and children with normal language: A critical review of the literature. *Journal of Speech and Hearing Research, 36,* 868-882.

Liles, B. Z., Duffy, R. J., Merritt, D. D. & Purcell, S. L. (1995). Measurement of narrative discourse ability in children with language disorders. *Journal of Speech and Hearing Research, 38,* 415-425.

Lorch, E. P., Berthiaume, K. S., Millich, R. & Van den Broek, P. (2007). Story comprehension impairments in children with ADHD. In Cain, K. and Oakhill, J. V. (Eds.), *Children's comprehension problems in oral and written language* (pp. 128-156). NY: Guilford Publications, Inc.

Mandler, J. M. (1982). Some uses and abuses of story grammar. *Discourse Processes*, *5,* 305-318.

Mayer, M. (1969). *Frog, where are you?* New York: Dial Press.

McCabe, A., & Bliss, L. S. (2003). *Patterns of narrative discourse*. Boston: Allyn & Bacon.

McCabe, A., Bliss, L., Barra, G. & Bennett, M. (2008). Comparison of personal versus fictional narratives of children with language impairment. *American Journal of Speech-Language Pathology, 17 (2),* 194-206.

McCabe, A., & Rollins, P. R. (1994). Assessment of preschool narrative skills. *American Journal of Speech-Language Pathology, 3 (1),* 45-56.

McFadden, T. & Gillam, R. (1996). An examination of the quality of narratives produced by children with language disorders. *Language, Speech and Hearing Services in Schools, 27,* 48–56.

Meringoff, L. (1980). A story a story: The influence of the medium on children's apprehension of stories. *Journal of Educational Psychology, 72,* 240-244.

Merritt, D. D., & Liles, B. Z. (1987). Story grammar ability in children with and without language disorder: story generation, story retelling and story comprehension. *Journal of Speech, Language, and Hearing Research, 30,* 539-552.

Merritt, D. D., & Liles, B. Z. (1989). Narrative analysis: Clinical applications of story generation and story retelling. *Journal of Speech and Hearing Disorders, 54 (3),* 438-447.

Miranda, A. E., McCabe, A., & Bliss, L. S. (1998). Jumping around and leaving things out: A profile of the narrative abilities of children with specific language impairment. *Applied Psycholinguistics, 19,* 647-667.

Morris-Friehe, M. J. & Sanger, D. D. (1992). Language samples using three story elicitation tasks and maturation effects. *Journal of Communication Disorders, 25,* 107-124.

Naremore, R. C. (1997). Making it hang together: Children's use of mental frameworks to structure narratives. *Topics in Language Disorders, 18 (1),* 16-31.

Nippold, M. A., Hesketh, L. J., Duthie, J. K., & Mansfield, T. C. (2005). Conversational versus expository discourse: A study of syntactic development in children, adolescents, and adults. *Journal of Speech, Language, and Hearing Research, 48,* 1048-1064.

Norbury, C. F. & Bishop, D. V. M. (2003). Narrative skills of children with communication impairments. *International Journal of Language and Communication Disorders, 38 (3),* 287-313.

Omanson, R. (1982). The relation between centrality and story category variation. *Journal of Verbal Learning and Verbal Behavior, 21,* 326-337.

Owens, R. E., (2004)*. Language disorders: A functional approach to assessment and intervention (4th ed.)*. Boston: Allyn & Bacon.

Paul, R. & Smith, R. L. (1993). Narrative skills in 4-year-olds with normal, impaired, and late-developing language. *Journal of Speech and Hearing Research, 36,* 592-598.

Pearce, W. M., (2003). Does the choice of stimulus affect the complexity of children's oral narratives? *Advances in Speech-Language Pathology, 5 (2),* 95-103.

Pearce, W. M. (2006). The role of morphosyntax and oral narrative in the differential diagnosis of specific language impairment. Unpublished Doctoral thesis. Flinders University of South Australia.

Peña, E. D., Gillam, R. B., Malek, M., Ruiz-Felter, R., Resendiz, M., Fiestas, C. & Sabel, T. (2006). Dynamic assessment of school-age children's narrative ability: An experimental investigation of classification accuracy. *Journal of Speech, Language and Hearing Research, 49 (5),* 1037-1057.

Peña, E., Iglesias, A., & Lidz, C. (2001). Reducing test bias through dynamic assessment of children's word learning ability. *American Journal of Speech Language Pathology, 10,* 138-154.

Peterson, C. (1994). Narrative skills and social class. *Canadian Journal of Education, 19 (3),* 251-269.

Peterson, C. & McCabe, A. (1983). *Developmental psycholinguistics: Three ways of looking at a child's narrative.* New York: Plenum Press.

Price, J. R., Roberts, J. E. & Jackson, S. C. (2006). Structural development of the fictional narratives of African American preschoolers. *Language, Speech & Hearing Services in Schools, 37 (3),* 178-190.

Purcell, S. L. & Liles, B. Z. (1992). Cohesion repairs in the narratives of normal-language and language-disordered school-age children. *Journal of Speech and Hearing Research, 35,* 354-362.

Renfrew, C. (1991). *The bus story: A test of continuous speech.* Published by author in Oxford.

Renz, K., Lorch, E. P., Milich, R., Lemberger, C., Bodner, A. & Welsh, R. (2003). On-line story representation in boys with attention deficit hyperactivity disorder. *Journal of Abnormal Child Psychology, 31 (1),* 93-104.

Rideout, V. J., Foehr, U. G. & Roberts, D. F. (2010, January). *Generation M2: Media in the lives of 8- to 18-year olds* (a Kaiser Family Foundation study). Retrieved June 28, 2010 from: http://www.kff.org/entmedia/upload/8010.pdf.

Ripich, D. N. & Griffith, P. L. (1988). Narrative abilities of children with learning disabilities and nondisabled children: Story structure, cohesion, and propositions. *Journal of Learning Disabilities, 21 (3)*, 165-173.

Roth, F. & Spekman, N. (1986). Narrative discourse: Spontaneously generated stories of learning-disabled and normally achieving students. *Journal of Speech and Hearing Disorders, 51,* 8-23.

Schneider, P. (1996). Effects of pictures versus orally presented stories on story telling by children with language impairment. *American Journal of Speech-Language Pathology, 5,* 86-96.

Schneider, P., & Dubé, R. V. (1997). Effect of pictorial versus oral story presentation on children's use of referring expressions in retell. *First Language, 5,* 283-302.

Schneider, P. & Dubé, R. V. (2005). Story presentation effects on children's retell content. *American Journal of Speech-Language Pathology, 14*, 52-60.

Scott, C. M. & Windsor, J. (2000). General language performance measures in spoken and written narrative and expository discourse of school-age children with language learning disabilities. *Journal of Speech, Language, and Hearing Research, 43,* 324-339.

Shapiro, L. R. & Hudson, J. A. (1991). Tell me a make-believe story: Coherence and cohesion in young children's picture-elicited narratives. *Developmental Psychology, 27 (6),* 960-974.

Sharp, D. L. M., Bransford, J. D., Goldman, S. R., Risko, V. J., Kinzer, C. K., & Vye, N. J. (1995). Dynamic visual support for story comprehension and mental model building by young, at-risk children. *Educational Technology Research and Development, 43 (4),* 25-42.

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, 366-376.

Spinillo, A. G. & Pinto, G. (1994). Children's narrative under different conditions: A comparative study. *British Journal of Developmental Psychology, 12,* 177-193.

Stach, B. A. (1998). *Clinical audiology: An introduction.* Singular Publishing Group, Inc. San Diego: London.

Stadler, M. A. & Ward, G. C. (2005). Supporting the narrative development of young children. *Early Childhood Education Journal, 33 (2),* 73-80.

Stein, N. & Glenn, C. R. (1979). An analysis of story comprehension in elementary school children. In Freedle, R. (Ed.), *New directions in discourse processing* (Vol. 2, pp. 53-120). Norwood, NJ: Ablex.

Swanson, L. A., Fey, M. E., Mills, C. E., & Hood, L. S. (2005). Use of narrative-based language intervention with children who have specific language impairment. *American Journal of Speech- Language Pathology, 14,* 131-143.

Swanson, H. L. & Lussier, C. M. (2001). A selective synthesis of the experimental literature on dynamic assessment. *Review of Educational Research*, *71* (2), 321-363.

Tager-Flusberg, H. (1995). 'Once upon a ribbit': Stories narrated by autistic children. *British Journal of Developmental Psychology, 13,* 45-59.

Thorne J. C., Coggins, T. E., Olsen, H. C. & Astley, S. J. (2007). Exploring the utility of narrative analysis in diagnostic decision making: Picture-bound reference, elaboration, and fetal alcohol spectrum disorders. *Journal of Speech, Language, and Hearing Research, 50 (2),* 459-474.

Tönsing, K. M., & Tesner, H. (1999). Story grammar analysis of pre-schoolers' narratives: An investigation into the influence of task parameters. *The South African Journal of Communication Disorders, 46,* 37-44.

Trabasso, T. & Nickels, M. (1992). The development of goal plans of action in the narration of a picture story. *Discourse Processes, 15*, 249-275.

Trabasso, T. & Sperry, L. L. (1985). Causal relatedness and importance of story events. *Journal of Memory and Learning, 24,* 595-611.

Trabasso, T. & Stein, N. L. (1997). Narrating, representing, and remembering event sequences. In van den Broek, P., Bauer, P. J. & Bourg, T. (Eds.). *Developmental spans in event comprehension and representations: Bridging fictional and actual events* (pp. 237-270). Mahwah, NJ: Lawrence Erlbaum.

Trabasso, T., Stein, N. L., Rodkin, P. C., Munger, M. P., & Baughn, C. R. (1992). Knowledge of goals and plans in the on-line narration of events. *Cognitive Development, 7*, 133-170.

Trabasso, T., & van den Broek, P. (1985). Causal thinking and the representation of narrative events. *Journal of Memory and Language, 24,* 612-630.

Trabasso, T., van den Broek, P. & Suh, S. (1989). Logical necessity and transivity of causal relations in stories. *Discourse Processes, 12,* 1-25.

van den Broek, P. (1989). Causal reasoning and inference-making in judging the importance of story statements. *Child Development, 60,* 286-297.

van den Broek, P., Lorch, E. P. & Thurlow, R. (1996). Children's and adults' memory for television stories: The role of causal factors, story-grammar categories, and hierarchical level. *Child Development, 67*, 3010–3028.

Vorster, J. (1980a). *Test of oral language production (TOLP).* Human Sciences Research Council.

Vorster, J. (1980b). *Toets vir mondelinge taalproduksie (TMT).* Raad vir Geesteswetenskaplike Navorsing.

Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes.* Cambridge, MA: Harvard University Press.

Wallach, G. P. (2008). Language intervention for school-age students: Setting goals for academic success. St Louis, MO: Mosby/Elsevier.

Watkins, R. V., Kelly, D. J., Harbers, H. M. & Hollis, W. (1995). Measuring children's lexical diversity: Differentiating typical and impaired language learners. *Journal of Speech and Hearing Research, 38,* 1349-1355.

Westby, C. E. (1991). Learning to talk-talking to learn: Oral-literate language differences. In Simon, C. S. (Ed.), *Communication skills and classroom success: Assessment and therapy methodologies for language and learning disabled students* (pp. 181-218). San Diego, CA: College-Hill.

Westby, C. E. (2005). Assessing and remediating text comprehension problems. In Catts, H.W. & Kamhi, A.G. (Eds.) (2nd Ed.). *Language and reading disabilities*. Boston, M.A.: Pearson Education, Inc.

Western Cape Educational Department (WCED) (2006). *Staatskoerant, 31 Augustus 2006. Government Notice. Department of Education. No. 869, 31 August 2006. South African Schools Act, 1996 (ACT NO 84 OF 1996). Amended national norms and standards for school funding.* Retrieved July 22, 2010, from http://wced.wcape.gov.za/circulars/circulars08/GG29179.pdf.

Western Cape Educational Department (WCED) (2010). *WCED Knowledge Management Online. Institution Detail.* Retrieved July 29, 2010, from http://wcedemis.wcape.gov.za/wced/findaschool.html.

NARRATIVE ANALYSIS PROTOCOL:

TRANSCRIPTIONS

The narratives were transcribed by the researcher according to the following self-designed protocol:

		Examples:
Insertions	**Bold**	**Uhm...** hulle het verveeld geraak
Repetitions	~~Strike through~~	Toe ~~toe~~ sien hy dat...
Word and sentence corrections	*Italic*	*Toe leen hy die* toe leen hulle bure vir hulle die leer.
Unfinished utterances	(Brackets)	...hartseer (en... ~~maar sy ma...~~ maar sy ma het seker vir hom...) maar sy ma...

The transcriptions included utterances of the participants, the researcher and the naive listener. Utterances by the researcher or naive listener are marked by L:. Utterances by the participant are marked by D:. Answers to questions about the narrative are written underneath the transcribed narrative: Name of story, Place of story and important characters in the story.

For example:

D: **Uhm...** hulle het verveeld geraak

L: Ok, kan jy klein bietjie harder vir my gesels?

D: ~~Hulle het verveeld geraak~~ en ~~toe kry~~ toe kry hulle 'n bal en toe speel hulle met die bal en toe't die bal op die dak gesit en toe vra hy vir die buurman *of hulle of hy hom* of hulle hom kan help. En toe gee hy 'n leer. Toe klim hy *op by die* op die leer en kry die bal. (~~Toe~~ toe kyk hy ~~na die~~ na die nes en toe die eiers en *toe ~~toe~~ het die* **uhm...**) Toe klim hy boom toe kyk hy na die nes, toe kyk hy na die twee eiers in die nes. Toe kom die ~~toe kom die~~ voël aan en toe ~~toe~~ word hy bang en toe val hy. Toe ~~toe~~ huil hy en toe hardloop die sussie in om *vir hom te sê* vir mamma te sê. En toe kom die mamma, toe vat hulle hom hospitaal toe en *toe sit hulle verband*, toe's sy arm gebreek en toe sit hulle verband om. En toe ~~toe~~ sê die mamma: "Moet nooit ooit weer boom klim nie".

Die seuntjie met die gebreekte arm.

By die huis.

Die sussie, die boetie, die mamma en die buurou langsaan.

PRODUCTIVITY

Productivity measurements included the following: Total number of words (TNW) and total number of T-units.

Total number of words:

The total number of words increases with age and is a measure of verbal productivity (Miller, 1991 as cited in Owens, 2004). Words affected during the transcription and T-unit analyses were omitted during the calculation of the total number of words. The total amount of words for each narrative was counted. The following conventions were used during the calculation of the TNW:

- All contractions (for example: *toe's; dis*) were expanded into infinitival clauses (for example: dit is; toe is) and counted as two words.
- Compound words were counted as one word.
- Words such as *afhaal, seerkry* were counted as two words and words such as *afgehaal, opgeklim* counted as three words.
- Past tense forms (for example: *geloop, geskop*),
- diminutives (for example: *storietjie, nessie*) and
- plurals (for example: *hande, balle, kinders*) were counted as two words.
- The following words were counted as one word because of its high occurrence in the narratives: *seuntjie, mamma/ma, dogter/dogtertjie, meisie/meisietjie mavoël/mammavoëltjie.*
- Insertions such as *mmm, ag, oe* also counted as one word.

Total number of T-units:

Each narrative was segmented into T-units (Hunt, 1965 in Justice et. al. 2006). T-unit segmentation is a common tool for parsing narrative utterances (spoken or written) into reliable units (Justice et al., 2006). A T-unit consists of a single main clause and its concomitant subordinate clauses and phrases (Vorster, 1980a). The total number of

T-units was calculated by counting the numbered T-units per narrative. The following conventions were followed during the calculation of the T-units:

- Coordinating sentences were regarded as a T-unit, while sub-coordinating sentences were regarded as being part of a T-unit.

- An utterance was divided into two T-units if it was connected by a coordinating conjunction (*maar, dus, of, nog, want)*, for example:

1. Toe gaan speel hulle bal

2. maar toe skop die seuntjie die bal te hoog

- An utterance connected by a subordinating conjunction was regarded as 1 T-unit (*wanneer, as, nadat, daarom, omdat, totdat, terwyl, toe(when))*. For example:

(1) En toe hulle terugkom² toe sê die ma eers vir hulle dat hulle dit nie moet doen nie

- An utterance that followed after the words *gesê, gedink, dink* was counted as part of the T-unit. For example:

(1) En toe sê hulle: "Maar ons wil buite speel"

- Each T-unit was written on a separate line and was numbered.

- Personal utterances or statements about the narrative were omitted if it did not add new information to the content of the narrative. For example:

  En uhm oe, juffrou ek kan nie meer onthou nie.

- Answers to questions after telling the narrative were also omitted during calculation.

SYNTACTIC COMPLEXITY

Mean length of T-unit (MLT):

The mean length of T-unit is similar to the mean length of utterance (MLU) and can be seen as the average length in words of the speaker's utterances (Owens, 2004). The mean length of T-unit correlates and increases with age (Owens, 2004). Word affected during the transcription and T-unit analyses were omitted during the calculation of the mean length of T-units. For the calculation of the mean length of T-unit the total number of words of the narrative was divided by the number of T-units. The answer was rounded off to one decimal place.

LEXICAL DIVERSITY

Total number of different words (NDW):

The number of different words in a sample of fixed length has been shown to increase systematically with age (Klee, 1992) and is strongly correlated with measures of semantic diversity of a child's lexicon (Miller, 1991 as cited in Owens, 2004). Word affected during the transcription and T-unit analyses were omitted. Each word was written once on an alphabetical table. A general rule was that:

- each word that was spelled differently, counted as a different word (For example: wou, wow).

- Contractions were written separately (dis = dit is; hy's = hy is).

- Singular and plural forms, diminutives, past tense forms and homonyms were written as different words (For example: kind – kinders, speel – gespeel, toe ("then"), toe ("to"), toe ("when"); sy("she"), sy ("his").

Example of table to calculate NDW:

A	B	C	D	E	F	G	H
I	J	K	L	M	N	O	P
Q	R	S	T	U	V	W	Y
							Total:

GOAL-ATTEMPT-OUTCOME SEQUENCES (GAO) AND INCLUSION OF GOALS, ATTEMPTS AND OUTCOMES:

The current study modified and combined the GAO sequences of Flory et al. (2006) and applied it to a different self compiled wordless picture book and animation which may be more applicable to the South African population.

The narrative for the wordless picture book and animation were written by the researcher and contained 5 possible GAO sequences. The internal responses and internal plans were incorporated into the Goal. The Attempts were not scored as linked, unlinked or specifically linked and the Outcomes were not scored as failed or

achieved. The following is a description of the Goal, Attempt and Outcomes measures used in the current study:

Goal: Explicit statement/s of what the character wants to achieve or do (character's intentions) or statements about the character thoughts or emotions (internal response) or utterances in order to change the current setting or event.

Attempt: Statements of the character's overt actions to achieve a goal.

Outcome: Indication of whether a goal is achieved or failed which can be described by an action, natural occurrence or an end statement.

Each narrative was scored according to the 5 possible GAO sequences as described by the researcher (See table 1). If a child produced similar descriptions of the possible goals, attempts and outcomes accepted by the researcher, it was acknowledged. A score of 0 (absent) or 1 (present) was given for each Goal, Attempt and Outcome. A score out of 3 were given for each GAO sequence. Table 2 provides an example of the scoring sheet used for each participant. The scores for the GAO sequences as well as the participants' scores for the total goals, attempts and outcomes are depicted in table 3 for group 1 and table 4 for group 2 in Appendix D.

Table 2: *Example of scoring sheet for the GAO sequences and total goals, attempts and outcomes for each participant.*

Participant:	GROUP 1 or 2:																			
	1. Book/Animation										2. Animation/Book									
	Nar 1					Nar 2					Nar 1					Nar 2				
	GAO	Goal	Attempt	Outcome	Score out of 3	GAO	Goal	Attempt	Outcome	Score out of 3	GAO	Goal	Attempt	Outcome	Score out of 3	GAO	Goal	Attempt	Outcome	Score out of 3
#	1					1					1					1				
	2					2					2					2				
	3					3					3					3				
	4					4					4					4				
	5					5					5					5				
Total /5:																				

General rules during calculation of GAO sequences and determination of goals, attempts or outcomes:

- If an utterance was followed directly by an outcome, it was considered as an attempt.

- If the utterance was not followed directly by an outcome, it could also be considered as a goal.

- Generally, the utterance (hy wou die eiers vat) was marked as an ATTEMPT and not as a GOAL, due to the fact that is was generally followed by an OUTCOME.

For example:

En toe wil hy die eiers vat (ATTEMPT)

Toe kom die voël en pik hom (OUTCOME)

OR

En toe wou hy die eiers vat (GOAL)

En toe probeer hy dit vat (ATTEMPT)

En toe pik die voël hom (OUTCOME)

OR

En toe wou die seuntjie die eiers² vat (GOAL)

En toe sê hy vir die meisie: "Kyk, hier is eiers²"

En toe sê sy: "Wow"

En toe kom die mammavoël

en toe hy dit wou vat, (ATTEMPT)

toe begin sy aan hom pik

- If an utterance such as "hy wou die eiers vat" was followed by a similar utterance like "en toe wou hy nou die eiers vat", the first utterance was considered as the GOAL and the second utterance as the ATTEMPT.

For example:

En toe wou hy die eiers² gaan vat het (GOAL)

En toe kom daar 'n voël

en toe wou die seuntjie probeer het om die eiers² te vat (ATTEMPT)

Toe pik die voël hom

- A goal stated explicitly, followed by an explicit attempt and outcome, constitute a GAO sequence. If a GOAL, ATTEMPT or OUTCOME was not stated directly, and was merely implied, a score of 0 was given.

<u>For example:</u>

Die ma het toe vir die seuntjie na die hospitaal toe <u>gevat</u>² om sy arm reg te maak.
(ATTEMPT = 1, OUTCOME = 0).

OR

Maar toe sien hy nie die voël wat hom waarsku om nie te gaan nie

Tot sy suster het hom <u>geroep</u>² om nie daar te gaan nie (ATTEMPT = 0)

Maar hy het nie vir haar geluister nie

Toe pik die voël hom (OUTCOME=1)

Table 1: *Possible GAO sequences accepted by the researcher*

GAO	Goal	1/0	Attempt	1/0	Outcome	1/0	Score /3
1	Hulle wil speel met die bal Hulle is verveeld, wil iets doen Die seuntjie stel voor /sê wat hulle moet doen Die seuntjie het 'n plan/idee gekry Hulle wou iets speel Hulle besuit hulle gaan buite speel		Die kinders of hulle, speel met die bal (skop die bal vir mekaar) Hy of hulle skop die bal		Die bal land op die dak Die bal is op die dak Die bal sit in die dak vas Die bal sit vas in die geut		
2	Hulle wil 'n leer leen Hulle wil die bal afkry Seuntjie se wat hulle moet doen om die bal af te kry Die seuntjie se hulle moet vir die buurman vra vir 'n leer		Die seuntjie of hulle gaan kry 'n leer, of vra die buurman vir 'n leer Hy klim op die leer		Die seuntjie/hy gooi die bal van die dak af, haal/kry die bal af, kry dit af, of kry die bal		

GAO	Goal	1/0	Attempt	1/0	Outcome	1/0	Score /3
3 (Seun)	Hy sien eiers in nes en wil/wou eiers uithaal, wys of daarna kyk Die seun noem/sê wat hy gaan of kan doen met die eiers		Hy strek na nes om eiers te vat **En toe/ toe** wil/wou hy die eiers vat Hy probeer die eiers vat		Seun val af Seun maak sy arm seer Die seuntjie kry seer Die seun huil		
4 (Voël)	Voël wil hom wegjaag/keer, wil haar babas beskerm		Die voël vlieg af, pik na seun / jaag die seun weg Die voël stamp hom van die leer af		Die seun val Die seun maak sy arm seer Die seun kry seer Die seuntjie huil		
5 (Mamma)	Mamma wil seun hospitaal toe vat of hom help / Mamma se hulle moet dokter toe gaan		Die mamma vat die seun dokter/hospitaal toe		Die seun word gehelp / kry behandeling Die seun kry gips Sy arm word reggemaak Sy arm is gebreek maar sal regkom / sal ok wees Sy arm sal reg wees		

FOCUSED COMPREHENSION AND GOAL-DIRECTED QUESTIONS OF MLE

1. <u>GAO:</u>

Picture	Question
1	Wat doen hulle? (Setting) Hoe dink jy <u>voel</u> hulle? Wat <u>dink</u> hulle?
2	Wat **wil** hulle doen?
3	Wat doen hulle toe?
4	Wat gebeur toe? Hoe <u>voel</u> die dogtertjie? Wat dink jy <u>sê</u> sy? Hoe dink jy <u>voel</u> die seuntjie? Wat <u>dink</u> die seuntjie? (aimed at GAO 2)

2. <u>GAO:</u>

Picture	Question
5	Wat **wil** hulle doen? Wat <u>sê</u> die seuntjie?
6	Wat gebeur toe? Wat <u>sê</u> die man?
7	Wat doen die seuntjie toe? Hoe dink jy <u>voel</u> die seuntjie toe hier?

3. <mark>GAO: (Seuntjie)</mark> and 4. <mark style="background-color:cyan">GAO: (Mammavoël)</mark>

Picture	Question
8	Wat sien die seuntjie? Wat <u>dink</u> die seuntjie? <mark>Wat **wil** hy doen?</mark> Wat <u>sê</u> hy vir die dogtertjie? Wat <u>dink</u> die dogtertjie?
9	<mark>Wat doen die seuntjie toe?</mark> Hoe <u>voel</u> die mammavoël hier? <mark style="background-color:cyan">Wat **wil** die mammavoël doen?</mark> Wat dink jy <u>sê</u> die dogtertjie vir hom? Hoe <u>voel</u> die dogtertjie hier?

10	Wat doen die mammavoël toe? Wat sê die seuntjie?
11	Wat gebeur toe?(seuntjie en mammavoël) Hoe voel die seuntjie? Wat doen die dogtertjie? Wat dink jy sê sy?

5. GAO (mamma):

Picture	Question
12	Wat dink die mamma? Wat **wil** die mamma doen? Wat sê sy?
13	Wat doen die mamma toe?
14	Wat gebeur toe?
15	Wat sê die mamma vir hulle? Hoe voel die kinders? Wat sê die kinders?

PICTORIAL CONTENT OF THE STORY

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

13.

14.

15.
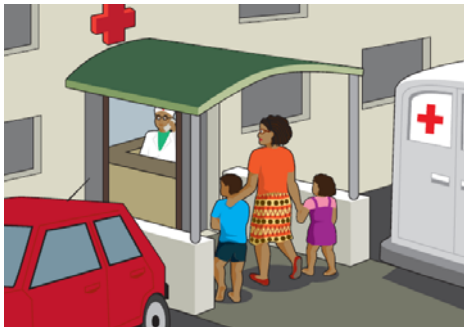
GAO SEQUENCE SCORES OF PARTICIPANTS

Table 3: *GAO scores of group 1*

Participant:	Book Nar1 GAO	Goal	Attempt	Outcome	Score out of 3	GAO	Goal	Attempt	Outcome	Score out of 3	GAO	Goal	Attempt	Outcome	Score out of 3	GAO	Goal	Attempt	Outcome	Score out of 3

GROUP 1:																				
	1. Book										**2. Animation**									
	Nar 1					**Nar 2**					**Nar 1**					**Nar 2**				
Participant:	GAO	Goal	Attempt	Outcome	Score out of 3	GAO	Goal	Attempt	Outcome	Score out of 3	GAO	Goal	Attempt	Outcome	Score out of 3	GAO	Goal	Attempt	Outcome	Score out of 3
1	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3
	2	1	1	1	3	2	1	1	1	3	2	1	1	1	3	2	1	1	1	3
	3	0	0	1	1	3	1	1	1	3	3	1	1	1	3	3	1	1	1	3
	4	0	1	1	2	4	1	1	1	3	4	1	1	1	3	4	1	1	1	3
	5	1	1	1	3	5	1	1	1	3	5	0	1	0	1	5	0	1	1	2
Total:		3	4	5			5	5	5			4	5	4			4	5	5	
2	1	0	1	1	2	1	0	1	1	2	1	1	1	1	3	1	1	1	1	3
	2	0	1	1	2	2	0	1	1	2	2	1	1	1	3	2	1	1	1	3
	3	0	0	1	1	3	1	0	1	2	3	1	1	1	3	3	1	1	1	3
	4	0	0	1	1	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2
	5	0	1	1	2	5	1	1	1	3	5	1	1	1	3	5	1	1	1	3
Total:		0	3	5			2	4	5			4	5	5			4	5	5	
3	1	1	1	1	3	1	1	1	1	3	1	1	1	0	2	1	1	1	1	3
	2	0	1	1	2	2	1	1	1	3	2	0	1	1	2	2	1	1	1	3
	3	0	1	1	2	3	0	1	1	2	3	1	0	1	2	3	1	0	1	2
	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2
	5	0	1	1	2	5	0	1	1	2	5	0	1	1	2	5	0	1	1	2
Total:		1	5	5			2	5	5			2	4	4			3	4	5	
4	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3
	2	0	1	1	2	2	0	1	1	2	2	0	1	1	2	2	1	1	1	3
	3	0	1	1	2	3	1	1	1	3	3	0	1	1	2	3	0	1	1	2
	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2
	5	0	1	1	2	5	1	1	1	3	5	0	1	1	2	5	1	1	1	3
Total:		1	5	5			3	5	5			1	5	5			3	5	5	

Grp	#	A	B	C	Σ	#	A	B	C	Σ	#	A	B	C	Σ	#	A	B	C	Σ
5	1	0	1	1	2	1	1	1	1	3	1	0	1	1	2	1	1	1	1	3
	2	0	1	1	2	2	0	1	1	2	2	0	1	1	2	2	0	1	1	2
	3	0	0	1	1	3	1	0	1	2	3	0	0	1	1	3	1	0	1	2
	4	1	1	1	3	4	0	1	1	2	4	1	1	1	3	4	0	1	1	2
	5	0	1	1	2	5	1	1	1	3	5	0	1	1	2	5	0	1	1	2
	Total:	1	4	5			3	4	5			1	4	5			2	4	5	
6	1	0	1	1	2	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3
	2	0	1	1	2	2	1	1	1	3	2	0	1	1	2	2	1	1	1	3
	3	1	1	1	3	3	1	1	1	3	3	1	1	1	3	3	1	1	1	3
	4	0	1	1	2	4	1	1	1	3	4	0	1	1	2	4	1	1	1	3
	5	0	1	1	2	5	1	1	1	3	5	0	1	1	2	5	0	1	0	1
	Total:	1	5	5			5	5	5			2	5	5			4	5	4	
7	1	0	1	1	2	1	0	1	1	2	1	0	1	1	2	1	0	1	1	2
	2	0	1	1	2	2	0	1	1	2	2	0	1	1	2	2	0	1	1	2
	3	0	1	1	2	3	0	1	1	2	3	0	1	1	2	3	0	1	1	2
	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2	4	1	1	1	3
	5	0	1	1	2	5	0	1	1	2	5	0	1	1	2	5	0	1	1	2
	Total:	0	5	5			0	5	5			0	5	5			1	5	5	
8	1	0	1	1	2	1	1	1	1	3	1	0	1	1	2	1	0	1	1	2
	2	0	1	1	2	2	0	1	1	2	2	1	1	1	3	2	0	1	1	2
	3	0	0	1	1	3	0	0	1	1	3	0	0	0	0	3	0	1	1	2
	4	0	1	1	2	4	1	1	1	3	4	0	1	0	1	4	0	1	1	2
	5	0	1	1	2	5	0	1	1	2	5	0	1	1	2	5	0	1	1	2
	Total:	0	4	5			2	4	5			1	4	3			0	5	5	
9	1	0	1	1	2	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3
	2	0	1	0	1	2	0	1	0	1	2	0	1	1	2	2	0	1	1	2
	3	0	0	1	1	3	0	1	1	2	3	0	1	1	2	3	0	1	1	2
	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2
	5	0	1	1	2	5	1	1	1	3	5	0	1	1	2	5	0	1	1	2
	Total:	0	4	4			2	5	4			1	5	5			1	5	5	
10	1	0	1	1	2	1	0	1	1	2	1	0	1	1	2	1	1	1	1	3
	2	0	1	1	2	2	0	1	1	2	2	0	1	1	2	2	0	1	1	2
	3	0	1	1	2	3	0	1	1	2	3	0	0	1	1	3	1	1	1	3
	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2	4	1	1	1	3
	5	0	1	0	1	5	0	1	1	2	5	0	1	1	2	5	0	1	1	2
	Total:	0	5	4			0	5	5			0	4	5			3	5	5	

	1. Animation Nar 1					1. Animation Nar 2					2. Book Nar 1					2. Book Nar 2				
	GAO	Goal	Attempt	Outcome	Score out of 3	GAO	Goal	Attempt	Outcome	Score out of 3	GAO	Goal	Attempt	Outcome	Score out of 3	GAO	Goal	Attempt	Outcome	Score out of 3
11	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3
	2	0	1	1	2	2	1	1	1	3	2	0	1	1	2	2	1	1	1	3
	3	0	1	1	2	3	0	1	1	2	3	0	1	1	2	3	0	1	1	2
	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2	4	1	1	1	3
	5	0	1	0	1	5	1	1	1	3	5	0	1	1	2	5	1	1	1	3
Total:		1	5	4			3	5	5			1	5	5			4	5	5	
12	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3
	2	0	1	1	2	2	0	1	1	2	2	0	1	1	2	2	1	1	1	3
	3	0	1	1	2	3	0	1	1	2	3	0	0	1	1	3	0	1	1	2
	4	0	0	1	1	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2
	5	0	1	0	1	5	1	1	0	2	5	0	1	0	1	5	0	1	0	1
Total:		1	4	4			2	5	4			1	4	4			2	5	4	
13	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3
	2	0	1	1	2	2	0	1	1	2	2	1	1	1	3	2	1	1	1	3
	3	0	0	1	1	3	0	1	1	2	3	1	0	1	2	3	1	0	1	2
	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2
	5	0	1	0	1	5	1	0	0	1	5	0	1	0	1	5	0	1	1	2
Total:		1	4	4			2	4	4			3	4	4			3	4	5	
Grand Total:		10	57	60			31	61	62			21	59	59			34	62	63	

Table 4: *GAO scores of group 2*

GROUP 2:																				
Participant:	1. Animation Nar 1					1. Animation Nar 2					2. Book Nar 1					2. Book Nar 2				
	GAO	Goal	Attempt	Outcome	Score out of 3	GAO	Goal	Attempt	Outcome	Score out of 3	GAO	Goal	Attempt	Outcome	Score out of 3	GAO	Goal	Attempt	Outcome	Score out of 3
14	1	1	1	1	3		1	1	1	3		1	1	1	3		1	1	1	3
	2	0	1	0	1		0	1	1	2		0	1	1	2		0	1	1	2
	3	0	1	1	2		1	0	1	2		0	0	1	1		0	0	1	1
	4	0	1	1	2		0	1	1	2		0	1	1	2		1	1	1	3
	5	0	1	0	1		0	1	1	2		0	1	0	1		0	1	0	1
Total:		1	5	3			2	4	5			1	4	4			2	4	4	

15	1	1	1	1	3		1	1	1	3		1	1	1	3		1	1	1	3
	2	0	1	1	2		0	1	1	2		0	1	1	2		1	1	1	3
	3	1	1	1	3		0	1	1	2		0	1	1	2		0	1	1	2
	4	0	1	1	2		0	1	1	2		0	1	1	2		0	1	1	2
	5	0	1	1	2		0	1	1	2		0	1	1	2		0	1	1	2
Total:		2	5	5			1	5	5			1	5	5			2	5	5	
16	1	0	1	1	2	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3
	2	0	1	1	2	2	1	1	1	3	2	0	1	1	2	2	1	1	1	3
	3	0	1	1	2	3	0	1	1	2	3	0	1	1	2	3	0	1	1	2
	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2
	5	0	1	1	2	5	1	1	1	3	5	1	1	1	3	5	1	1	1	3
Total:		0	5	5			3	5	5			2	5	5			3	5	5	
17	1	0	1	1	2	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3
	2	0	1	1	2	2	1	1	0	2	2	0	1	1	2	2	1	1	0	2
	3	0	1	1	2	3	0	1	1	2	3	0	1	0	1	3	0	1	1	2
	4	0	1	1	2	4	0	1	1	2	4	0	1	0	1	4	0	1	1	2
	5	0	1	1	2	5	0	1	1	2	5	0	1	1	2	5	0	1	1	2
Total:		0	5	5			2	5	4			1	5	3			2	5	4	
18	1	0	1	1	2	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3
	2	0	1	1	2	2	0	1	1	2	2	1	1	1	3	2	1	1	1	3
	3	0	1	0	1	3	1	1	1	3	3	1	0	1	2	3	1	0	1	2
	4	0	1	0	1	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2
	5	0	1	0	1	5	0	1	1	2	5	0	1	0	1	5	1	1	0	2
Total:		0	5	2			2	5	5			3	4	4			4	4	4	
19	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3
	2	0	1	1	2	2	1	1	1	3	2	1	1	1	3	2	1	1	1	3
	3	0	0	0	0	3	1	1	1	3	3	0	1	1	2	3	1	1	1	3
	4	1	1	0	2	4	0	1	1	2	4	0	1	1	2	4	1	1	1	3
	5	0	1	1	2	5	1	1	1	3	5	1	1	1	3	5	1	1	1	3
Total:		2	4	3			4	5	5			3	5	5			5	5	5	
20	1	0	1	1	2	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3
	2	0	1	1	2	2	1	1	1	3	2	1	1	1	3	2	1	1	1	3
	3	0	0	1	1	3	1	1	1	3	3	1	1	1	3	3	1	1	1	3
	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2
	5	0	1	1	2	5	0	1	0	1	5	0	1	1	2	5	0	1	1	2
Total:		0	4	5			3	5	4			3	5	5			3	5	5	

Group	#				T	#				T	#				T	#				T
21	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3
	2	0	1	1	2	2	1	1	1	3	2	1	1	1	3	2	1	1	1	3
	3	0	0	1	1	3	0	1	1	2	3	0	1	1	2	3	1	1	1	3
	4	1	1	1	3	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2
	5	0	1	0	1	5	0	1	0	1	5	0	1	0	1	5	0	1	0	1
Total:		2	4	4			2	5	4			2	5	4			3	5	4	
22	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3
	2	0	1	1	2	2	0	1	1	2	2	0	1	1	2	2	0	1	1	2
	3	0	1	1	2	3	1	1	0	2	3	0	1	1	2	3	1	1	1	3
	4	0	1	1	2	4	0	1	0	1	4	0	1	1	2	4	1	1	1	3
	5	0	1	1	2	5	0	1	1	2	5	0	1	1	2	5	0	1	1	2
Total:		1	5	5			2	5	3			1	5	5			3	5	5	
23	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3	1	1	1	0	2
	2	0	1	0	1	2	0	1	1	2	2	0	1	1	2	2	0	1	1	2
	3	0	0	0	0	3	1	0	1	2	3	1	1	1	3	3	1	1	1	3
	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2	4	1	1	1	3
	5	0	1	1	2	5	1	1	1	3	5	0	0	1	1	5	0	1	0	1
Total:		1	4	3			3	4	5			2	4	5			3	5	3	
24	1	0	1	1	2	1	0	1	1	2	1	0	1	1	2	1	1	1	1	3
	2	0	1	1	2	2	0	1	1	2	2	0	1	1	2	2	1	1	1	3
	3	0	1	1	2	3	1	0	1	2	3	0	1	1	2	3	0	1	1	2
	4	1	1	1	3	4	0	1	1	2	4	1	1	1	3	4	0	1	1	2
	5	0	1	1	2	5	0	1	1	2	5	1	1	0	2	5	0	1	0	1
Total:		1	5	5			1	4	5			2	5	4			2	5	4	
25	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3
	2	0	1	1	2	2	0	1	1	2	2	0	1	1	2	2	0	1	1	2
	3	0	0	1	1	3	0	0	1	1	3	0	1	1	2	3	0	0	1	1
	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2
	5	0	1	0	1	5	0	1	1	2	5	0	1	1	2	5	0	1	1	2
Total:		1	4	4			1	4	5			1	5	5			1	4	5	
26	1	0	1	1	2	1	1	1	1	3	1	1	1	0	2	1	1	1	1	3
	2	0	1	1	2	2	1	1	1	3	2	0	1	1	2	2	1	1	1	3
	3	0	0	1	1	3	1	0	1	2	3	0	0	1	1	3	1	1	1	3
	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2
	5	0	1	0	1	5	0	1	0	1	5	0	1	1	2	5	0	1	0	1
Total:		0	4	4			3	4	4			1	4	4			3	5	4	

27	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3	1	1	1	1	3
	2	0	1	1	2	2	1	1	1	3	2	1	1	1	3	2	1	1	1	3
	3	0	1	1	2	3	0	1	1	2	3	1	1	1	3	3	1	1	1	3
	4	0	1	1	2	4	1	1	1	3	4	0	1	1	2	4	0	1	1	2
	5	0	1	1	2	5	1	1	1	3	5	0	1	1	2	5	1	1	1	3
Total:		1	5	5			4	5	5			3	5	5			4	5	5	
28	1	0	1	1	2	1	1	1	1	3	1	0	1	1	2	1	0	1	1	2
	2	0	1	1	2	2	1	1	0	2	2	0	1	1	2	2	0	1	1	2
	3	0	1	1	2	3	0	1	1	2	3	0	1	1	2	3	0	1	1	2
	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2
	5	0	1	1	2	5	0	1	1	2	5	0	1	1	2	5	0	1	0	1
Total:		0	5	5			2	5	4			0	5	5			0	5	4	
29	1	0	1	1	2	1	1	1	1	3	1	0	1	1	2	1	0	1	1	2
	2	0	1	1	2	2	1	1	1	3	2	1	1	1	3	2	1	1	1	3
	3	0	1	1	2	3	0	1	1	2	3	0	1	1	2	3	0	1	1	2
	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2	4	0	1	1	2
	5	0	1	1	2	5	0	1	1	2	5	0	1	1	2	5	0	1	1	2
Total:		0	5	5			2	5	5			1	5	5			1	5	5	
Grand Total:		12	74	68			37	75	73			27	76	73			41	77	71	

EXAMPLE OF A PARTICIPANT'S STORY ANALYSES

<u>**Participant 6:**</u>
<u>**Transcription of narratives:**</u>

Narrative 1 Book:

D: Daar was eendag

L: Bietjie harder...

D: 'n seuntjie en 'n dogtertjie *hulle was broers* hulle was broer en suster.

L: Broer en suster. Gesels bietjie harder vir my poplap...

D: En eendag het die seuntjie met die bal gespeel. Hy't dit te hoog geskop en bo-op die dak geskop.

L: Mmm.

D: En toe wou die dogtertjie met die bal speel,

L: Mmm.

D: maar toe was dit op die dak.

L: Mmm.

D: Toe gaan hulle na hulle bure toe en *ewe skielik* hulle vra: "kan ons *julle kan ons julle leer* jou leer leen?".

L: Mmm.

D: En die buur sê toe: "Ja". En hy gee toe die leer ~~leer~~ vir hulle. Hulle kry toe die bal af van die dak af. Die dogtertjie sien toe die nes met eiers en sy wil nou die eiers hê. Maar toe kom die mammavoël, sy het *ge* die seuntjie gepik op sy hand want hy wou die eiers vat.

L: Mmm.

D: En ewe skielik toe val hy en breek sy arm. Hy't gehuil, die dogtertjie het hulle ma gaan roep. Hulle was dokter toe. Die dokter het sy arm in *verband* 'n verband en *gi* gips toegedraai. En toe hulle *weer kom,* terug huis toe gaan toe wou die dogtertjie gaan buite speel toe skel die ma haar uit en sê: "Nee".

L: Is dit al?

D: **En dis die laaste stukkie.**

L: Is jy klaar vertel?

D: **Ja.**

Wees versigtig voordat jy wil iets vat wat nie aan jou behoort nie.

By hulle huis.

Die seuntjie, die dogtertjie en die mamma.

Narrative 2 Book:

D: Daar was eendag 'n dogtertjie en 'n seuntjie en hulle buur en hulle mamma. En hulle wou eendag gaan speel het. En die seuntjie het toe die bal gevat *en ge* en *hu* hulle wou sokker speel, *maar die* toe skop die seuntjie die bal te hoog en hy skop dit toe op die dak.

L: Mmm.

D: En **uhm** toe wou hulle dit afhaal, maar hulle het nie 'n leer gehad nie, toe gaan vra hulle vir hulle bure. *En hulle sê toe* en die seuntjie roep toe hulle buur. En *hulle s en hy vra* hy sê: "Hallo, *kan ek asseblief* **uhm** kan ons asseblief jou leer leen?". En toe sê hy: "Ja, wees asseblief net versigtig en bring dit asseblief terug". En toe sit hulle nou die leer teen die dak *en hulle* toe hulle dit klaar op die dak gesit het, toe klim die seuntjie by die leer op en hy vat toe die bal en hy haal dit af. En hy sê vir die dogtertjie: "Kyk, daar's eiers!" Toe sê hy: "Hoekom vat ons dit nie en dan maak ons dit lekker gaar dan maak ons vir ons scramble eggs?". En die *die* dogtertjie dink toe: "Ok, kom ons doen dit nou maar". Sy sê vir hom: "Ok". En hy wou toe net die eiers vat toe kom die mammavoël en sy sien toe hier wil die seuntjie nou *s* haar eiers vat. *Toe het hy toe het hy nou toe* toe dink die mammavoël: "Oe, nou maak jy my vies los my eiers uit!" en sy wou hom toe pik.

L: Ja.

D: En toe was sy hand nog besig om die eiers te vat toe byt die mammavoël hom en hy val toe af en breek sy arm.

L: Mmm.

D: En die dogtertjie het toe *die mammavoël geroep ag nie die mamma* die mamma geroep. Sy het heeltyd geskree: "Mamma mamma!". En die mamma het toe gekom en gesê: "Wat is fout?". Toe sê sy: "Boetie het sy arm gebreek". En *toe s sê* toe was hulle voor by die kar toe sê die mamma: "Moenie worry, ons gaan jou nou by die dokter kry". En toe gaan hulle dokter toe en die mamma wou sy arm baie gesond

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maak. En sy vat hulle nou toe dokter toe en die dokter het toe gips op sy arm gesit en toe hulle klaar was toe het die dokter seker medisyne gegee vir die seuntjie om te drink. Toe gaan hulle huis toe. En toe moes hulle op die bank sit. En die mamma sê: "*Julle speel* julle klim nooit op 'n leer en probeer 'n mammavoël se eiers vat nie, hoor julle vir my!". Toe sê hulle: "Ok mamma". En hulle was toe baie baie hartseer. **En uhm ja**.

L: Is dit klaar?

D: **Ja**.

Narrative 1 Animation:

D: Daar was eendag 'n seuntjie en 'n dogtertjie. En hulle was nou baie bored. Hulle het nou niks gehad om te doen nie. Toe het die seuntjie 'n idee gehad. En ~~en~~ toe gaan hy en hy sê vir sy sussie: "Kom ons gaan speel buite met die bal". En hy skop toe die bal te hoog. En die bal val toe op die dak. Toe gaan hulle na hulle buur toe en hulle sê toe: "Hallo". En *hu* hulle vra toe kan hulle sy leer leen.

L: Mmm.

D: En die buur sê toe: "Ja". En toe **uhm** gee hy die leer vir hulle. En hy sê: "Onthou net om dit terug te bring." Toe gaan hulle nou. *En hulle vat nou* en hulle gaan sit nou toe die leer daar. En **uhm** ~~en~~ toe klim die seuntjie op, maar toe haal hy die bal af. Maar toe sien hy eiers, mammavoël se eiers. Toe dink hy: "Ons kan nou vir my en my suster kan ons lekker scrambled eggs daarvan maak, want ons eiers is nou klaar".

L: Mmm.

D: Toe sê hy vir sy suster: "Daar is eiers in die boom, ons kan vir ons lekker scrambled eggs maak omdat ons **uhm** eiers nou klaar is".

L: Mmm.

D: Toe sê sy sussie vir hom: **uhm** "Ok". Maar toe sien sy die mammavoël.

L: Mmm.

D: Toe sê sy: "Pasop vir die mammavoël is daar, netnou pik sy jou, dan val jy af en breek jou arm". Toe **uh** ~~toe~~ wou hy nou die eiers vat. En die sussie sê net: "Nee, nee, nee!" die heeltyd. Maar hy luister nie. En toe wou hy die eiers vat. Toe kom die mammavoël en sy pik hom. En hy val toe van die leer af. En hy huil toe en hy't sy arm gebreek. En hy huil en hy huil. En die dogtertjie hardloop in en sy roep haar mamma. *Sy* en haar mamma kom en sy sê: "Mamma boetie het seergekry" Toe sê sy: "Wat het hy gedoen?" Toe sê sy: "Hy wou die bal van die dak afhaal, toe kom daar 'n

mammavoël, en toe pik sy hom op die arm en toe val *sy af* hy af". Toe gee die mamma die buur se leer vir hom terug. En sy vat haar seun hospitaal toe. *Die en die dokter* en toe gaan hulle in die dokter's *kamer in* se plekkie in. En toe sê die dokter vir die mamma dat sy arm is gebreek. En hy moet net nooit weer **uhm** probeer 'n mammavoël se eiers vat nie. Toe sê hy: "Ok". *En hy* en toe ~~toe~~ sê die dokter: "As jou arm beter is, dan moet jy kom vir pille" .

L: Mmm.

D: "En moet nooit weer op 'n leer klim en aan probeer iets vat wat nie aan jou behoort nie". Toe sê die seuntjie: "Ok". Toe gaan hulle huis toe, skel die mamma en sê: "Hoekom het julle sulke stoute goed gedoen *en hoekom het jy pro* en hoekom het jy probeer 'n mammavoel se eiers vat?" Toe sê hulle *hulle wou* **uhm** *want hulle wou s* want hulle wou scrambled eggs maak en vir hulle eiers maak, want hulle eiers is nou klaar.

L: Mmm.

D: Toe sê die mamma: "Dan *s* bel julle vir my en sê dan gaan ek vir julle gaan koop". Toe sê hulle ok hulle sal dit nie weer doen nie.

L: Ja. Is jy klaar vertel?

D: (knik kop).

Moet nie iets vat wat nie aan jou behoort nie.

By hulle huis.

Die buur, hulle mamma, die dokter en die dogtertjie en die seuntjie.

Narrative 2 Animation:

D: Daar was eendag 'n meisie en 'n seuntjie. *En toe* hulle was baie bored. *Toe wou hulle nou* toe wou die dogtertjie gaan pop speel en die seuntjie wou gaan bal speel. **Uhm** maar toe gaan hulle ~~gaan hulle~~ altwee nou om bal te speel. En toe skop die seuntjie die bal te hoog. Toe gaan dit op die dak. *Toe wou hulle* toe wou hulle nou dit afkry, maar toe was die seuntjie nou nie *te lank* so lank nie. En toe **uhm** ~~toe~~ gaan **uhm** ~~gaan~~ hulle en hulle gaan toe na die buur toe. En hulle vra toe vir die buur: "Kan ons jou leer leen?". En hy sê toe: "Ja wees versigtig, *want* en jou suster moet dit vir jou vashou, want netnou val jy". Toe gaan hulle en die seuntjie haal toe nou die bal af van die dak af. En hy sien toe eiers en hy dink nou: "Oe, *ek kan nou ek* en my suster kan nou lekker vir ons scrambled eggs maak". Toe **uhm** ~~toe~~ sê hy vir haar: "Kom ons

maak vir ons scrambled eggs". Toe sê sy: "Ok". Toe wou hy nou die eiers vat. Maar toe kom die mammavoël en sy't nou baie baie kwaad gevoel, want sy't gesien *hy wou sy* hy wou haar eiers vat". Toe *wou* het sy net gedink nou gaan sy hom pik en dan val hy af. Toe het sy hom gepik, toe val hy af en hy breek sy arm. Toe gaan die dogtertjie toe binne toe. En sy sê toe: "Mamma mamma boetie het ~~het~~ seergekry". Toe gaan hulle **uhm** ~~hulle~~ *binnetoe en* **ag** buitentoe toe sê **uhm** ~~toe sê~~ die mamma: "Wat het gebeur?". **Uhm** toe sê hy *hy't hy wou die leer vat* hy't die leer by die buur geleen en *toe wou hy nou toe wou hy* toe wou hy die bal van die dak afhaal, toe ~~toe~~ sien hy eiers, toe wou vir hom nou scrambled eggs maak. Toe sê sy: "Nou gaan binnetoe" *en dan gaan jy* toe sê sy *vir die* vir sy suster dat sy moet ook binnetoe gaan. Toe gaan hulle altwee nou binnetoe. Toe gee die mamma die leer vir die buur terug. En **uhm** toe gaan *hulle* die mamma met die seun kar toe. En **uhm** sy sê: "jy gaan nou maar soet moet wees". *En sê* en die dogtertjie moes **uhm** haar skoene gaan haal en haar broer s'n. Toe gaan sy, toe gaan haal sy die skoene. Toe gaan hulle nou dokter toe en die dokter sê dis reg, **uhm** hulle kan maar *in sy* in die dokter se kantoor ingaan. Toe gaan hulle nou in. Toe **uhm** sê die dokters: "Jou arm is gebreek en jy moet net nooit weer vat wat aan jou behoort nie". Toe sê hy: "Ok". Toe gaan hulle huis toe. Toe moes hulle nou op die bank sit en daar bly. Toe sê die mamma vir die dogtertjie: "Moet nooit weer jou **uhm** boetie slaan op sy arm nie, want net nou word dit weer seer". En **uhm** sy't vir die seuntjie gesê: "Jy moet nooit weer *iets vat* **uhm** ander voël se eiers vat wat nie aan jou behoort nie, en as jy scrambled eggs soek dan *moet jy* as ek nou weg is, dan moet jy my bel dan gaan ek winkel toe en ek gaan koop ek eiers".

L: Is dit klaar?

D: (knik kop).

T-units of narratives:

Narrative 1 Book:

1. Daar was eendag 'n seuntjie en 'n dogtertjie hulle was broer en suster

2. En eendag het die seuntjie met die bal <u>gespeel</u>²

3. <u>Hy't</u>² dit te hoog <u>geskop</u>² en bo-op die dak <u>geskop</u>²

4. En toe wou die dogtertjie met die bal speel

5. maar toe was dit op die dak

6. Toe gaan hulle na hulle <u>bure</u>² toe

7. en hulle vra "kan ons jou leer leen?"

8. En die buur sê toe: "Ja"

9. En hy gee toe die leer vir hulle

10. Hulle kry toe die bal af van die dak af

11. Die dogtertjie sien toe die nes met <u>eiers</u>²

12. en sy wil nou die <u>eiers</u>² hê

13. Maar toe kom die mammavoël

14. sy het die seuntjie <u>gepik</u>² op sy hand

15. want hy wou die <u>eiers</u>² vat

16. En ewe skielik toe val hy en breek sy arm

17. <u>Hy't</u>² <u>gehuil</u>²

18. die dogtertjie het hulle ma gaan roep

19. Hulle was dokter toe

20. Die dokter het sy arm in 'n verband en gips <u>toegedraai</u>³

21. En toe hulle terug huis toe gaan toe wou die dogtertjie gaan buite speel

22. toe skel die ma haar uit en sê: "Nee"

TNW: 191   MLT: 8.7

Narrative 2 Book:

1. Daar was eendag 'n dogtertjie en 'n seuntjie en hulle buur en hulle mamma

2. en hulle wou eendag gaan speel het

3. En die seuntjie het toe die bal <u>gevat</u>²

4. en hulle wou sokker speel

5. toe skop die seuntjie die bal te hoog

6. en hy skop dit toe op die dak

7. En toe wou hulle dit <u>afhaal</u>²

8. maar hulle het nie 'n leer gehad nie

9. toe gaan vra hulle vir hulle bure²

10. en die seuntjie roep toe hulle buur

11. En hy sê: "Hallo, kan ons asseblief jou leer leen?"

12. En toe sê hy: "Ja, wees asseblief net versigtig

13. en bring dit asseblief terug"

14. En toe sit hulle nou die leer teen die dak

15. toe hulle dit klaar op die dak gesit² het, toe klim die seuntjie by die leer op

16. en hy vat toe die bal

17. en hy haal dit af

18. En hy sê vir die dogtertjie: "Kyk, daar's² eiers²!"

19. Toe sê hy: "Hoekom vat ons dit nie

20. en dan maak ons dit lekker gaar

21. dan maak ons vir ons scramble eggs²?"

22. En die dogtertjie dink toe: "Ok, kom ons doen dit nou maar"

23. Sy sê vir hom: "Ok"

24. En hy wou toe net die eiers² vat

25. toe kom die mammavoël

26. en sy sien toe hier wil die seuntjie nou haar eiers² vat

27. toe dink die mammavoël: "Oe, nou maak jy my vies

28. los my eiers² uit!"

29. en sy wou hom toe pik

30. En toe was sy hand nog besig om die eiers² te vat

31. toe byt die mammavoël hom

32. en hy val toe af en breek sy arm

33. En die dogtertjie het toe die mamma geroep²

34. Sy het heeltyd geskree²: "Mamma mamma!"

35. En die mamma het toe gekom² en gesê²: "Wat is fout?"

36. Toe sê sy: "Boetie het sy arm gebreek²"

37. En toe was hulle voor by die kar

38. toe sê die mamma: "Moenie worry, ons gaan jou nou by die dokter kry"

39. En toe gaan hulle dokter toe

40. en die mamma wou sy arm baie gesond maak

41. En sy vat hulle nou toe dokter toe

42. en die dokter het toe gips op sy arm <u>gesit</u>²

43. en toe hulle klaar was toe het die dokter seker medisyne <u>gegee</u>² vir die seuntjie om te drink.

44. Toe gaan hulle huis toe

45. En toe moes hulle op die bank sit

46. En die mamma sê: "julle klim nooit op 'n leer en probeer 'n mammavoël se <u>eiers</u>² vat nie, hoor julle vir my!"

47. Toe sê hulle: "Ok mamma"

48. En hulle was toe baie baie hartseer

TNW: 430   MLT: 9.0

Narrative 1 Animation:

1. Daar was eendag 'n seuntjie en 'n dogtertjie

2. en hulle was nou baie bored

3. Hulle het nou niks gehad om te doen nie

4. Toe het die seuntjie 'n idee gehad

5. En toe gaan hy

6. en hy sê vir sy sussie: "Kom ons gaan speel buite met die bal"

7. En hy skop toe die bal te hoog

8. En die bal val toe op die dak

9. Toe gaan hulle na hulle buur toe

10. en hulle sê toe: "Hallo"

11. En hulle vra toe kan hulle sy leer leen

12. En die buur sê toe: "Ja"

13. En toe gee hy die leer vir hulle

14. En hy sê: "Onthou net om dit terug te bring."

15. Toe gaan hulle nou

16. en hulle gaan sit nou toe die leer daar

17. En toe klim die seuntjie op

18. maar toe haal hy die bal af

19. Maar toe sien hy <u>eiers</u>², mammavoël se <u>eiers</u>²

20. Toe dink hy: " Ons kan nou vir my en my suster, kan ons lekker <u>scrambled eggs</u>² daarvan maak,

21. want ons <u>eiers</u>² is nou klaar"

22. Toe sê hy vir sy suster: "Daar is eiers² in die boom,

23. ons kan vir ons lekker scrambled eggs² maak omdat ons eiers² nou klaar is"

24. Toe sê sy sussie vir hom: "Ok"

25. Maar toe sien sy die mammavoël

26. Toe sê sy: "Pasop vir die mammavoël is daar, netnou pik sy jou,

27. dan val jy af en breek jou arm"

28. Toe wou hy nou die eiers² vat

29. En die sussie sê net: "Nee, nee, nee!" die heeltyd

30. Maar hy luister nie

31. En toe wou hy die eiers² vat

32. Toe kom die mammavoël

33. en sy pik hom

34. En hy val toe van die leer af

35. En hy huil toe

36. en hy't² sy arm gebreek²

37. En hy huil en hy huil

38. En die dogtertjie hardloop in

39. en sy roep haar mamma

40. en haar mamma kom

41. en sy sê: "Mamma boetie het seergekry³"

42. Toe sê sy: "Wat het hy gedoen²?"

43. Toe sê sy: "Hy wou die bal van die dak afhaal²,

44. toe kom daar 'n mammavoël

45. en toe pik sy hom op die arm

46. en toe val hy af"

47. Toe gee die mamma die buur se leer vir hom terug

48. En sy vat haar seun hospitaal toe

49. en toe gaan hulle in die dokter se plekkie² in

50. En toe sê die dokter vir die mamma dat sy arm is gebreek²

51. En hy moet net nooit weer probeer 'n mammavoël se eiers² vat nie

52. Toe sê hy: "Ok"

53. en toe sê die dokter: "As jou arm beter is, dan moet jy kom vir pille en moet nooit weer op 'n leer klim en aan probeer iets vat wat nie aan jou behoort nie"

54. Toe sê die seuntjie: "Ok"

55. Toe gaan hulle huis toe,

56. skel die mamma en sê: "Hoekom het julle sulke stoute goed gedoen²

57. en hoekom het jy probeer 'n mammavoël se eiers² vat?"

58. Toe sê hulle want hulle wou scrambled eggs² maak en vir hulle eiers² maak

59. want hulle eiers² is nou klaar

60. Toe sê die mamma: "Dan bel julle vir my en sê

61. dan gaan ek vir julle gaan koop"

62. Toe sê hulle ok hulle sal dit nie weer doen nie

TNW: 541   MLT: 8.7

Narrative 2 Animation:

1. Daar was eendag 'n meisie en 'n seuntjie

2. hulle was baie bored

3. toe wou die dogtertjie gaan pop speel

4. en die seuntjie wou gaan bal speel

5. maar toe gaan hulle altwee nou om bal te speel

6. En toe skop die seuntjie die bal te hoog

7. Toe gaan dit op die dak

8. toe wou hulle nou dit afkry²

9. maar toe was die seuntjie nou nie so lank nie

10. En toe gaan hulle en hulle gaan toe na die buur toe

11. En hulle vra toe vir die buur: "Kan ons jou leer leen?"

12. En hy sê toe: "Ja wees versigtig,

13. en jou suster moet dit vir jou vashou²,

14. want netnou val jy"

15. Toe gaan hulle

16. en die seuntjie haal toe nou die bal af van die dak af

17. En hy sien toe eiers²

18. en hy dink nou: "Oe, ek en my suster kan nou lekker vir ons scrambled eggs² maak"

19. Toe sê hy vir haar: "Kom ons maak vir ons scrambled eggs²"

20. Toe sê sy: "Ok"

21. Toe wou hy nou die eiers² vat

22. Maar toe kom die mammavoël

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23. en sy't² nou baie baie kwaad gevoel²

24. want sy't² gesien² hy wou haar eiers² vat"

25. Toe het sy net gedink² nou gaan sy hom pik en dan val hy af

26. Toe het sy hom gepik²

27. toe val hy af

28. en hy breek sy arm

29. Toe gaan die dogtertjie toe binne toe

30. En sy sê toe: "Mamma mamma boetie het seergekry³"

31. Toe gaan hulle buitentoe

32. toe sê die mamma: "Wat het gebeur?"

33. toe sê hy hy't² die leer by die buur geleen²

34. en toe wou hy die bal van die dak afhaal²

35. toe sien hy eiers²

36. toe wou vir hom nou scrambled eggs² maak

37. Toe sê sy: "Nou gaan binnetoe"

38. toe sê sy vir sy suster dat sy moet ook binnetoe gaan

39. Toe gaan hulle altwee nou binnetoe

40. Toe gee die mamma die leer vir die buur terug

41. En toe gaan die mamma met die seun kar toe

42. En sy sê: "jy gaan nou maar soet moet wees"

43. en die dogtertjie moes haar skoene² gaan haal en haar broer s'n

44. Toe gaan sy,

45. toe gaan haal sy die skoene²

46. Toe gaan hulle nou dokter toe

47. en die dokter sê dis² reg, hulle kan maar in die dokter se kantoor ingaan²

48. Toe gaan hulle nou in

49. Toe sê die dokters²: "Jou arm is gebreek²

50. en jy moet net nooit weer vat wat aan jou behoort nie"

51. Toe sê hy: "Ok"

52. Toe gaan hulle huis toe

53. Toe moes hulle nou op die bank sit en daar bly

54. Toe sê die mamma vir die dogtertjie: "Moet nooit weer jou boetie slaan op sy arm nie,

55. want netnou word dit weer seer"

56. En <u>sy't</u>² vir die seuntjie <u>gesê</u>²: "Jy moet nooit weer ander voël se <u>eiers</u>² vat wat nie aan jou behoort nie,

57. en as jy <u>scrambled eggs</u>² soek dan as ek nou weg is, dan moet jy my bel

58. dan gaan ek winkel toe en ek gaan koop ek <u>eiers</u>²"

TNW: 523   MLT: 9.0

ENGLISH TRANSLATION OF T-UNITS

<u>**Participant 6:**</u>

<u>**T-units of narratives:**</u>

Narrative 1 Book:

1. One day there was a boy and a girl, they were brother and sister

2. and one day the boy played with the ball

3. he kicked it too high and kicked it on the roof

4. and then the girl wanted to play with the ball

5. but then it was on the roof

6. then they went to their neighbours

7. and then asked: "can we borrow your ladder?"

8. and the neighbour then said: "yes"

9. and he gave the ladder to them

10. then they got the ball off the roof

11. then the girl saw the nest with eggs

12. and she wanted the eggs

13. but then the mommybird came

14. she bit the boy on his hand

15. because he wanted to take the eggs

16. and then all of a sudden he fell and broke his arm

17. he cried

18. the girl went to call their mom

19. they went to the doctor

20. the doctor wrapped a bandage and cast around his arm

21. and when they went home the girl wanted to go play outside

22. then the mommy scolded her and said: "no"

Narrative 2 Book:

1. One day there was a girl and a boy and their neighbour and their mom

2. and one day they wanted to go play

3. and the boy took the ball

4. and they wanted to play soccer

5. then the boy kicked the ball too high

6. and then he kicked it onto the roof

7. and then they wanted to take it off

8. but they did not have a ladder

9. then they went and asked their neighbours

10. and then the boy called their neighbour

11. and he said: "hallo, can we please borrow you ladder?"

12. and then he said: "yes, just be careful

13. and please bring it back"

14. and then they put the ladder against the roof

15. and when they finished putting it on the roof, then the boy climbed up the ladder

16. and then he took the ball

17. and he got it off

18. and he said to the girl: "Look, here're eggs!"

19. Then he said: "why don't we take it

20. and then we cook it

21. and then we make scrambled eggs for ourselves

22. and the girl thought: "Ok, let's do it now"

23. She said to him: "Ok"

24. and he just wanted to take the eggs

25. then the mommybird came

26. and she saw that the boy wanted to take her eggs

27. then the mommybird thought: "O, now you make me mad

28. leave my eggs alone

29. and she wanted to bite him

30. and then he was busy taking the eggs

31. then the mommybird bit him

32. and he fell off and broke his arm

33. and then the girl called the mommy

34. she shouted the whole time: "mommy mommy!"

35. and then the mommy came and said: "What is wrong?"

36. the she said: "Brother broke his arm"

37. and then they were in front of the car

38. then mommy said: "Don't worry, we are going to get you to the doctor now"

39. and then they went to the doctor

40. and the mommy wanted to cure his arm

41. and she took him to the doctor

42. and the doctor put a cast on his arm

43. and when they were finished, the doctor probably gave medicine to the boy to drink

44. then they went home

45. and then they had to sit on the couch

46. and the mommy said: "you never climb on a ladder and try to take a mommybird's eggs, do you hear me?"

47. then they said: "Ok mommy"

48. and they were very very sad

Narrative 1 Animation:

1. One day there was a boy and a girl

2. and they were very bored

3. They had nothing to do

4. Then the boy had an idea

5. And then he went

6. and he said to his sister: "Let's go outside and play with the ball"

7. And then he kicked the ball too high

8. and then the ball fell on the roof

9. then they went to their neighbour

10. and then they said: "Hallo"

11. and then they asked him if they can borrow his ladder

12. and then the neighbour said: "Yes"

13. and then he gave the ladder to them

14. and he said: "Just remember to bring it back"

15. then they went

16. and then they went and placed the ladder there

17. and then the boy climbed up

18. but then he took the ball off

19. but then he saw eggs, a mommybird's eggs

20. then he thought: "For me and my sister, we can make nice scrambled eggs of it

21. because our eggs are finished now"

22. then he said to his sister: "there are eggs in the tree,

23. we can make nice scrambled eggs,

24. because our eggs are finished now"

25. then his sister said to him: "Ok"

26. but then she saw the mommybird

27. then she said: "Be careful of the mommybird there, maybe she will bite you

28. and then you will fall and break your arm

29. then he wanted to take the eggs

30. and the sister just said: "No, no, no!" the whole time

31. but he didn't listen

32. and then he wanted to take the eggs

33. then the mommybird came

34. and she bit him

35. and then he fell off the ladder

36. and then he cried

37. and he broke his arm

38. and he cries and he cries

39. and the girl runs in

40. and she calls her mommy

41. and her mommy comes

42. and she says: "Mommy, brother got hurt"

43. then she said: "What did he do?"

44. then she said: "he wanted to take the ball off the roof

45. then a mommybird came

46. and then she bit him on the arm

47. and then he fell off

48. then the mommy gave the neighbour's ladder back to him

49. and she took the boy to the hospital

50. and then they went into the doctor's place

51. and then the doctor said to the mommy that his arm is broken

52. and he must just never try to take a mommybird's eggs again

53. then he said: "Ok"

54. and then the doctor said: "When your arm is better, you must come and get pills and never climb on a ladder again and try and take something that does not belong to you"

55. then the boy said: "Ok"

56. then they went home

57. then the mommy scolded and said: "Why did you do such naughty things?

58. and why did you try to take a mommybird's eggs?"

59. then they said that they wanted to make scrambled eggs and make eggs for themselves

60. because their eggs are finished now

61. then the mommy said: "Then you phone me and tell me

62. then I will buy it for you

63. then they said ok they will not do it again

Narrative 2 Animation:

1. One day there was a girl and a boy

2. they were very bored

3. then the girl wanted to go and play with her dolls

4. and the boy wanted to go and play with the ball

5. but then they both went to play with the ball

6. and then the boy kicked the ball too high

7. then it went on the roof

8. then they wanted to get it off

9. but then the boy was not that tall

10. and then they went and they went to the neighbour

11. and they asked the neighbour: "Can we borrow you ladder?"

12. and then he said: "Yes, be careful,

13. and your sister must hold on to the ladder for you

14. because you might fall"

15. then they went

16. and then the boy took the ball off the roof

17. and then he saw eggs

18. and he thought: "O, my sister and I can now make scrambled eggs for ourselves"

19. then he said to her: "Let's make scrambled eggs for ourselves"

20. then she said: "Ok"

21. then he wanted to take the eggs

22. but then the mommybird came

23. and she felt very very angry

24. because she saw that he wanted to take her eggs

25. then she thought that she is going to bite him and then he will fall off

26. then she bit him

27. then he fell off

28. and he broke his arm

29. then the girl went inside

30. and then she said: "Mommy mommy, brother got hurt"

31. then they went outside

32. then the mommy said: "What happened?"

33. then he said he borrowed the ladder from the neighbour

34. and then he wanted to take the ball off the roof

35. and then he saw eggs

36. and then he wanted to make scrambled eggs for himself

37. then she said: "Now go inside"

38. then she told the sister that she must also go inside

39. then they both went inside

40. then the mommy gave the ladder back to the neighbour

41. and then mommy went with the boy to the car

42. and she said: "You must be good now"

43. and the girl had to go fetch her and her brother's shoes

44. and then she went

45. then she fetched the shoes

46. then they went to the doctor

47. and the doctor said it is fine, they can go into the doctor's office

48. Then they went inside

49. Then the doctors said: "your arm is broken

50. and you must just never take something again that does not belong to you"

51. Then he said: "Ok"

52. Then they went home

53. then they had to sit on the couch and stay there

54. then the mommy said to the girl: "Never hit your brother on his arm again

55. because it may get sore again"

56. and she said to the boy: "you must never take another bird's eggs that does not belong to you"

57. and if you want scrambled eggs, and if I am away, you must phone me

58. and then I will go to the shop and I will buy you eggs"

Narrative 1 Book:

Number of Different Words (NDW)

A	B	C	D	E	F	G	H
af arm	bal bo-op breek broer buite bure buur		daar dak die dit dogtertjie dokter	eendag eiers en ewe		gaan gee gehuil gepik geskop gespeel gips	haar hand hê het hoog huis hulle hy

I	J	K	L	M	N	O	P
in	Ja jou	kan kom kry	leen leer	ma maar mammavoël met	'n na nee nes nou	ons op	

Q	R	S	T	U	V	W	Y
	roep	sê seuntjie sien skel skielik speel suster sy ("she") sy ("his")	te terug toe ("then") toe ("to") toe ("when") toegedraai	uit	val van vat verband vir vra	want was wil wou	
							Total: 80

Narrative 2 Book:

Number of Different Words (NDW)

A	B	C	D	E	F	G	H
af	baie		daar	eendag	fout	gaan	haal
afhaal	bal		dak	eggs		gaar	haar
arm	bank		dan	eiers		gebreek	hallo
asseblief	besig		die	en		gegee	hand
	boetie		dink			gehad	hartseer
	breek		dit			gekom	heeltyd
	bring		doen			geroep	het
	bure		dogtertjie			gesê	hier
	buur		dokter			gesit	hoekom
	by		drink			geskree	hom
	byt					gesond	hoog
						gevat	hoor
						gips	huis
							hulle
							hy

I	J	K	L	M	N	O	P
is	Ja	kan	leen	maak	'n	Oe	pik
	jou	kar	leer	maar	net	Ok	probeer
	julle	klaar	lekker	mamma	nie	om	
	jy	klim	los	mammavoël	nog	("to")	
		kom		medisyne	nooit	ons	
		kry		Moenie	nou	op	
		Kyk		moes			
				my			

Q	R	S	T	U	V	W	Y
	roep	scramble	te	uit	val	was	
		se	teen		vat	Wat	
		seker	terug		versigtig	wees	
		seuntjie	toe		vies	wil	
		sien	("then")		vir	Worry	

		sit	toe ("to")		voor	wou	
		skop	toe		vra		
		sokker	("when")				
		speel					
		sy					
		("she")					
		sy					
		("his")					
							Total: 127

Narrative 1 Animation:

Number of Different Words (NDW)

A	B	C	D	E	F	G	H
aan	baie		daar	eendag		gaan	haal
af	bal		daarvan	eggs		gebreek	haar
afhaal	behoort		dak	eiers		gedoen	Hallo
arm	bel		dan	ek		gee	hardloop
As	beter		dat	en		gehad	heeltyd
	boetie		die			goed	het
	boom		dink				hoekom
	bored		dit				hom
	breek		doen				hoog
	bring		dogtertjie				hospitaal
	buite		dokter				huil
	buur						huis
							hulle
							hy

I	J	K	L	M	N	O	P
idee	ja	kan	leen	maak	'n	ok	pasop
iets	jou	klaar	leer	maar	na	om	pik
in	julle	klim	lekker	mamma	nee	("to")	pille
is	jy	kom	luister	mammavoël	net	omdat	plekkie

Q	R	S	T	U	V	W	Y
		koop		met moet my	netnou nie niks nooit nou	ons onthou op	probeer

Q	R	S	T	U	V	W	Y
	roep	sal scrambled se sê seergekry seun seuntjie sien sit skel skop speel stoute sulke sussie suster sy ("she") sy ("his")	te terug toe ("then") toe ("to")		val van vat vir vra	want was wat weer wou	

Total: 130

176

Narrative 2 Animation:

Number of Different Words (NDW)

A	B	C	D	E	F	G	H
aan	baie		daar	eendag		gaan	haal
af	bal		dak	eggs		gebeur	haar
afhaal	bank		dan	eiers		gebreek	het
afkry	behoort		dat	ek		gedink	hom
altwee	bel		die	en		gee	hoog
ander	binne		dink			geleen	huis
arm	binnetoe		dit			gepik	hulle
as	bly		dogtertjie			gesê	hy
	boetie		dokter			gesien	
	bored		dokters			gevoel	
	breek						
	broer						
	buitentoe						
	buur						
	by						

I	J	K	L	M	N	O	P
in	Ja	kan	lank	maak	'n	oe	pik
ingaan	jou	kantoor	leen	maar	na	ok	pop
is	jy	kar	leer	mamma	net	om	
		kom	lekker	mammavoël	netnou	("to")	
		koop		meisie	nie	ons	
		kwaad		met	nooit	ook	
				moes	nou	op	
				moet			
				my			

Q	R	S	T	U	V	W	Y
	reg	s'n	te		val	want	
		scrambled	terug		van	was	
		se	toe		vashou	wat	

177

sê	("then")		vat	weer
seer	toe ("to")		versigtig	wees
seergekry			vir	weg
seun			voël	winkel
seuntjie			vra	word
sien				wou
sit				
skoene				
skop				
slaan				
so				
soek				
soet				
speel				
suster				
sy ("she")				
sy ("his")				

Total: 138

GAO Sequences:

<table>
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<tr><th rowspan="3">Participant:</th><th colspan="10">1. Book/Animation</th><th colspan="10">2. Animation/Book</th></tr>
<tr><th colspan="5">Nar 1</th><th colspan="5">Nar 2</th><th colspan="5">Nar 1</th><th colspan="5">Nar 2</th></tr>
<tr><th>GAO</th><th>Goal</th><th>Attempt</th><th>Outcome</th><th>Score out of 3</th><th>GAO</th><th>Goal</th><th>Attempt</th><th>Outcome</th><th>Score out of 3</th><th>GAO</th><th>Goal</th><th>Attempt</th><th>Outcome</th><th>Score out of 3</th><th>GAO</th><th>Goal</th><th>Attempt</th><th>Outcome</th><th>Score out of 3</th></tr>
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<tr><td></td><td>5</td><td>0</td><td>1</td><td>1</td><td>2</td><td>5</td><td>1</td><td>1</td><td>1</td><td>3</td><td>5</td><td>0</td><td>1</td><td>1</td><td>2</td><td>5</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
<tr><td>Total /5:</td><td>1</td><td>5</td><td>5</td><td></td><td></td><td>5</td><td>5</td><td>5</td><td></td><td></td><td>2</td><td>5</td><td>5</td><td></td><td></td><td>4</td><td>5</td><td>4</td><td></td></tr>
</table>

	STELLENBOSCH UNIVERSITY	
	FACULTY OF HEALTH SCIENCES	

COMMITTEE FOR HUMAN RESEARCH (CHR)

APPLICATION FOR THE REGISTRATION OF A RESEARCH PROJECT
(To be completed in typescript)

A. PRINCIPAL INVESTIGATOR

Surname	Engelbrecht		**Initials**	L	**Title**	Miss
Department	Speech- language and hearing therapy					
Present position	Student		**E-mail**	14298074@sun.ac.za		
Telephone no.	**(w)**	021 938 9494	**Cell**	0822600824	**Fax**	

B. PROJECT TITLE (MAXIMUM OF 250 CHARACTERS FOR DATABASE PURPOSES)

THE EFFECT OF DIFFERENT VISUAL MODALITY AND TASK CONDITIONS ON THE NARRATIVES OF TYPICALLY DEVELOPING 9 YEAR OLD CHILDREN

C. INFORMATION FOR THE EVALUATION OF THE ETHICS (COMPLETE EVERY BLOCK WITH A YES OR A NO)

1. Are humans	Yes	, alive	Yes	or dead	no	, the subjects of your research?

2. Will any medicine be tested during the investigation?	no
2.1 If **YES** to question 2, is the medicine approved and registered by the Medicines Control Council?	n.a.
2.1.1 If **YES** to question 2.1,	n.a.
2.1.1.1 is the medicine registered for the dose which will be used in this specific project?	n.a.
2.1.1.2 is the medicine registered for the indication(s) which will be used in this specific project?	n.a.
2.2 If **NO** to question 2.1, is the medicine approved by the Medicines Control Council for your use in this specific project?	n.a.
2.3 If **NO** to questions 2.1.1.1 and/or 2.1.1.2 is the medicine approved by the Medicines Control Council for your use in this specific project?	n.a.
3. Will any radioactive material be administered to the patient during the investigation?	no
4. Is any biohazardous material (*) involved in the project?	no
5. Have you acquainted yourself with the code of conduct regarding the ethics of research at this institution and do you undertake to fully comply with it at all times?	yes
(*) "Biohazardous material" refers to recombinant DNA molecules, viruses, fungi, parasites, bacteria and all other potentially biohazardous material or products that are dangerous to both the experimental subject and the researcher, and which is subject to strict containment specifications and safety measures.	

D. SIGNING OF THE APPLICATION

Applicant	LIZANNE ENGELBRECHT	Signature	Date
Supervisor(*)	Print name	Signature	Date
Departmental Head	Print name	Signature	Date
(*) When a person not medically or dentally qualified intends undertaking research on patients or where access to patient records which is not part of normal practice, is required, a medical doctor or a dentist must countersign this application as proof that the research will be executed with his/her consent and under his/her supervision.			

Office use only

Approved by the Committee for Human Research				**Project ID**
Conditional / Provisional		**Direct / Final**		

**ETHICAL APPROVAL BY THE ETHICS COMMITEE OF HEALTH
SCIENCES, STELLENBOSCH UNIVERSITY**

UNIVERSITEIT·STELLENBOSCH·UNIVERSITY
jou kennisvennoot · your knowledge partner

02 March 2009   **MAILED**

Miss L Engelbrecht
Dept of Speech-Language and Hearing
Stellenbosh University
PO Box 19063
Tygerberg
7505

Dear Miss Engelbrecht

"The effect of different visual modality and task conditions on the narratives of 9 year old children."

ETHICS REFERENCE NO: N09/01/016

RE : APPROVAL

It is a pleasure to inform you that the Committee for Human Research has approved the above-mentioned project on 4 February 2009, including the ethical aspects involved, for a period of one year from this date.

This project is therefore now registered and you can proceed with the work. Please quote the above-mentioned project number in ALL future correspondence.

Please note that a progress report (obtainable on the website of our Division) should be submitted to the Committee before the year has expired. The Committee will then consider the continuation of the project for a further year (if necessary). Annually a number of projects may be selected randomly and subjected to an external audit.

Translations of the consent document in the languages applicable to the study participants, should be submitted.

Federal Wide Assurance Number: 00001372
Institutional Review Board (IRB) Number: IRB0005239

The Committee for Human Research complies with the SA National Health Act No.61 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 Part 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health).

Kind Regards

Approval Date: 4 February 2009   Expiry Date: 4 February 2010

02 March 2009 11:20   Page 1 of 2

Fakulteit Gesondheidswetenskappe · Faculty of Health Sciences

Verbind tot Optimale Gesondheid · Committed to Optimal Health
Afdeling Navorsingsontwikkeling en -steun · Division of Research Development and Support
Posbus/PO Box 19063 · Tygerberg 7505 · Suid-Afrika/South Africa
Tel.: +27 21 938 9075 · Faks/Fax: +27 21 931 3352

Yours faithfully

MRS MERTRUDE DAVIDS
RESEARCH DEVELOPMENT AND SUPPORT
Tel: 021 938 9207 / E-mail: mertrude@sun.ac.za
Fax: 021 931 3352

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APPENDIX H

ETHICAL APPROVAL OF WESTERN CAPE EDUCATIONAL DEPARTMENT

Navrae
Enquiries **Dr RS Cornelissen**
IMibuzo

Telefoon
Telephone **(021) 467-2286**
IFoni

Faks
Fax **(021) 425-7445**
IFeksi

Verwysing
Reference **20090320-0010**
ISalathiso

Wes-Kaap Onderwysdepartement

Western Cape Education Department

ISebe leMfundo leNtshona Koloni

Miss Lizanne Engelbrecht
Department of Speech, Language and Hearing Therapy
University of Stellenbosch
P.O. Box 19063
TYGERBERG
7505

Dear Miss L. Engelbrecht

RESEARCH PROPOSAL: THE EFFECT OF DIFFERENT VISUAL MODALITY AND TASK CONDITIONS ON THE NARRATIVES OF 9 YEAR OLD CHILDREN.

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **23rd April 2009 to 30th June 2009**.
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Dr R. Cornelissen at the contact numbers above quoting the reference number.
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
10. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:

The Director: Research Services
Western Cape Education Department
Private Bag X9114
CAPE TOWN
8000

We wish you success in your research.

Kind regards.

Signed: Ronald S. Cornelissen
for: **HEAD: EDUCATION**
DATE: 22nd April 2009

**MELD ASSEBLIEF VERWYSINGSNOMMERS IN ALLE KORRESPONDENSIE / PLEASE QUOTE REFERENCE NUMBERS IN ALL CORRESPONDENCE /
NCEDA UBHALE IINOMBOLO ZESALATHISO KUYO YONKE IMBALELWANO**

**GRAND CENTRAL TOWERS, LAER-PARLEMENTSTRAAT, PRIVAATSAK X9114, KAAPSTAD 8000
GRAND CENTRAL TOWERS, LOWER PARLIAMENT STREET, PRIVATE BAG X9114, CAPE TOWN 8000**

WEB: http://wced.wcape.gov.za

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LETTER TO SCHOOL PRINCIPAL

Universiteit Stellenbosch
Fakulteit Gesondheidswetenskappe
Departement Spraak- Taal- en Gehoorterapie
Tel : (021) 938 – 9494

Die Skoolhoof

AANGAANDE: Spraak- en taalterapie navorsingsprojek

Ek is 'n nagraadse Spraak- en taalterapie student aan die Universiteit van Stellenbosch. Om my meestersgraad te behaal word daar van my verwag om 'n navorsingsprojek te voltooi. Vir hierdie projek het ek ten doel om die effektiwiteit te bestudeer van verskillende metodes vir die ontlokking van stories by kinders om hul taal te evalueer.

Die studie sal behels dat ek Graad 3 leerders selekteer d.m.v. toestemmingsbriewe en 'n kort woordeskattoets. Tweedens sal daar individuele video-opnames in 'n stil vertrek gemaak word van die kinders se stories wat ongeveer 10 minute sal duur. Die opnames sal hoogstens 4 vrydae oggende neem.

Na afloop van die studie sal daar 'n kort individuele verslag oor elke kind geskryf word en aan die ouers en skool gestuur word. Enige spraak-en taalprobleme wat tydens die studie opgemerk word, sal verwys word na 'n spraak-en taalterapeut vir 'n in-diepte evaluasie. 'n Opsomminsverslag van die navorsingsbevindinge sal ook aan die einde van die studie aan die skool oorhandig word.

Na aanleiding van u toestemming, sal die toestemmingsbriewe aan die ouers/voog van die leerders gestuur word. Die brief sal verduidelik waaroor die studie handel, die ouers/voog is onder geen verpligting nie en kan enige tyd onttrek van die studie.

Ek glo dat die inligting van die navorsingsprojek tot hulp van die onderwysers kan wees ten opsigte van spraaak en taalvaardighede. U kan myself of die hoof van die Departement Spraak- Taal- en Gehoorterapie by die nommer (021)-938 9494 kontak indien u verdere inligting benodig.

Die uwe

_____

Lizanne Engelbrecht (Student: Spraak- taal en gehoorterapie)

_____

Mev. Daleen Klop (Hoof van departement)

PARTICIPANT INFORMATION AND CONSENT FORM

TOESTEMMINGSVORM VIR GEBRUIK DEUR OUERS/WETTIGE VOOGDE

TITEL VAN DIE NAVORSINGSPROJEK:

Die invloed van verskillende visuele ontlokkingstimuli op die narratiefproduksie van graad 3 kinders.

U kind *(of pleegkind, indien van toepassing)* word genooi om deel te neem aan 'n navorsingsprojek. Lees asseblief hierdie inligtingsblad op u tyd deur aangesien die besonderhede daarin verduidelik word. Indien daar enige deel van die projek is wat u nie ten volle verstaan nie, is u welkom om my daaroor uit te vra. U kind se deelname is ook **volkome vrywillig** en dit staan u vry om deelname te weier op enige tydstip.

Hierdie studie is deur die Komitee vir Navorsing **van die** Afdeling Spraak-Taal-Gehoorterapie **goedgekeur en sal uitgevoer word volgens die etiese riglyne van die Universiteit van Stellenbosch. Dit is ook vir goedkeuring aan die** Wes-Kaap Onderwysdepartement **voorgelê.**

Wat behels hierdie navorsingsprojek?

Stories kan as 'n nuttige metode beskou word om kinders se taalvaardighede te evalueer. Hierdie projek wil die effek van verskillende visuele metodes om goeie stories by kinders te ontlok, bestudeer sodat die mees effektiewe metode om kinders se taalvaardighede tydens storie-vertel aktiwiteite te ontlok, bepaal kan word. Hierdie projek sal slegs plaasvind nadat toestemming gegee is deur u kind se skoolhoof en uself.

Indien u toestemming verleen dat u kind aan die projek deelneem, sal sy/haar taalvaardighede getoets word. 'n Verslag van die taaltoets sal aan u en die skoolhoof

gegee word sodat u kind hulp kan ontvang indien nodig. Alle resultate sal vertroulik hanteer word.

Die navorsingsprogram bestaan daaruit dat 'n nagraadse spraak-taalterapie student vir u kind individueel 2 verskillende stories laat vertel na aanleiding van verskillende visuele ontlokkingsmetodes ('n kort animasie en 'n prentboek). Die voortoetsing en data-insameling sal strek oor 6 dae vanaf Mei tot Julie 2009 en sal gedurende skooltyd plaasvind.

STUDENT in Meestergraad in Spraakheelkunde: L. Engelbrecht

STUDIELEIER: Mev. D Klop

KONTAKNOMMER: 021 938 9494 of 082 2600 824

Indien u toestemming verleen dat u kind mag deelneem moet die volgende vorm deur u voltooi word en aan die klasonderwyseres teruggestuur word

Verklaring deur ouer/wettige voog

Met die ondertekening van hierdie dokument onderneem ek, (*naam van ouer/wettige voog*) …………..…................., om my kind (*naam van kind*) …………...…......., wat .... jaar oud is, te laat deelneem aan 'n navorsingsprojek getiteld: **Die invloed van verskillende visuele ontlokkingstimuli op die narratiefproduksie van graad 3 kinders.**

Ek verklaar dat:

- Ek hierdie inligtings- en toestemmingsvorm gelees het of aan my laat voorlees het en dat dit in 'n taal geskryf is waarin ek vaardig en mee gemaklik is.

- My kind moet instem om aan die navorsingsprojek deel te neem as hy/sy ouer as 7 jaar is, en dat sy/haar instemming op hierdie vorm aangeteken sal word.

- Ek geleentheid gehad het om vrae te stel en dat al my vrae bevredigend beantwoord is.

- Ek verstaan dat deelname aan hierdie projek vrywillig is en dat daar geen druk op my geplaas is om my kind te laat deelneem nie.

- My kind te eniger tyd aan die projek mag onttrek en dat hy/sy nie op enige wyse daardeur benadeel sal word nie.

- My kind gevra mag word om aan die projek te onttrek voordat dit afgehandel is indien die navorser van oordeel is dat dit in sy/haar beste belang is, of indien my kind nie die ooreengekome studieplan volg nie.

- Dat my kind se identiteit nie bekend gemaak sal word indien die resultate van die studie gepubliseer of bekendgemaak word nie

Geteken te (*plek*) ....……………. op (*datum*) …………...………..
2009.

....
Handtekening van ouer/wettige voog   Handtekening van getuie

VRAELYS AAN OUERS

- **Beskou u die kind se ontwikkeling as normaal?** (Ja/Nee**) Indien *Nee* verskaf besonderhede**

....

- **Het u kind 'n geskiedenis van herhaalde oorinfeksies en gehoorprobleme?** (Ja/Nee**) Indien *Ja* verskaf besonderhede**

....

- **Het u kind 'n geskiedenis van spraak-taalprobleme?** (Ja/Nee**) Indien *Ja* verskaf besonderhede**

....

....

BAIE DANKIE VIR U SAMEWERKING. STUUR ASSEBLIEF DIE VOLTOOIDE VORM TERUG AAN DIE KLASONDERWYSERES

Instemming van minderjarige

Ek (naam van kind/minderjarige) ..………………….................……………. is genooi om deel te neem aan bogenoemde navorsingsprojek.

- **Die terapeut en my ouers het die besonderhede van bogenoemde navorsingsprojek aan my verduidelik en ek verstaan wat hulle aan my gesê het.**

- **Hulle het ook aan my verduidelik dat die projek die volgende insluit: ek gaan twee stories moet vertel en my vertellings sal op videoband opgeneem word.**

- **Ek weet ook dat ek te eniger tyd aan die navorsingsprojek kan onttrek indien ek ongelukkig is.**

- **Deur my naam hieronder in te vul, onderneem ek om** vrywillig **aan die navorsingsprojek deel te neem. Ek bevestig ook dat ek nie deur my ouers of terapeut gedwing is om deel te neem nie.**

....

Naam van kind   Onafhanklike getuie

(Deur kind geskryf, indien moontlik)