The development of early literacy skills among a group of urban Sepedi-speaking children

by

Henriëtte Schutte

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Supervisor: Mrs E Naude

Co-supervisor: Dr E Taljard

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ABSTRACT:

The study examined the typical development of early literacy in a group of typically developing preschool Sepedi first language children residing in Atteridgeville, by determining their performance on a protocol of early literacy tasks. The following aspects were included: written language awareness, narrative abilities, phonological awareness, letter name knowledge, grapheme-phoneme correspondence and literacy motivation. The performance of the participants on the various tasks was used to describe the early literacy development of the target population and to identify relevant risk criteria that may indicate delayed early literacy development in the target population. The performance of participants on these tasks differed from those of other participants in local and international studies, which underscores the necessity of culturally sensitive procedures for identifying delays in the early literacy development of children. The influence of factors such as the mother's level of education, gender, participants' level of engagement in literacy activities and participants' current academic performance on the development of early literacy skills were also investigated. Based on the results as well as other indications from the literature, possible risk factors for delayed early literacy development for this group are listed.

Die studie het gefokus op die tipiese ontwikkeling van vroeë geletterdheidsvaardighede van 'n groep tipiese voorskool Sepedi eerste taal kinders met normale ontwikkeling wat in Atterigdeville woon, deur hulle prestasie op 'n reeks vroeë geletterdheidstake te bepaal. Die volgende aspekte is ingesluit bewustheid van geskrewe taal,, storieterugvertellingsvaardighede, fonologiese bewustheid, letternaam kennis, grafeem-foneem assosiasie en geletterdheidsmotivering. Die prestasie van die proefpersone op die verskillende take is gebruik om die vroeë geletterdheidsvaardighede van die teikenpopulasie te beskryf sowel as om relevante risikokriteria te identitifiseer wat kan dui op 'n moontlike agterstand in die vroeë geletterdheidsvaardighede van die teikenpopulasie. Die huidige studie se deelnemers se prestasie op hierdie take het verskil van dié van ander deelnemers in soortgelyke plaaslike en internasionale studies, wat die noodsaaklikheid van die gebruik van kultuur-sensitiewe prosedures in die indentifisering van agterstande in vroeë gelettererdheidsontwikkeling van kinders beklemtoon. Die invloed van faktore soos 'n moeder se opvoedingsvlak, deelnemers se geslag, deelnemers se huidige

akademiese prestasie en deelnemers se vlak van betrokkenheid by geletterdheidsaktiwiteite, op vroeë geletterdheidsontwikkeling is ook ondersoek. Op grond van die resultate van die huidige studie sowel as ander gegewens uit die literatuur, word moontlike risiko faktore vir vertraagde vroeë geletterdheidsontwikkeling weergegee.

KEYWORDS:
Early literacy development, Sepedi-speaking, cultural sensitivity, written language awareness, narrative abilities, phonological awareness, letter-name knowledge, grapheme-phoneme correspondence, literacy motivation.
SLEUTELWOORDE:

Vroeë geletterdheidsontwikkeling, Sepedi, kultuursensitiwiteit, geskrewe taal bewustheid, storieterugvertellingsvaardighede, fonologiese bewustheid, letternaam kennis, grafeem-foneem assosiasie, geletterdheidsmotivering.

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1. Introduction:

In recent years, the development and stimulation of early literacy have been investigated zealously. Despite the vast amount of research on this subject, researchers have varied in their use of terminology. Examples of the aforementioned terminology are: early literacy, pre-literacy and emergent literacy (Boudreau and Hedberg, 1999:249; Justice and Ezell, 2002:17; Justice, Invernizzi and Meier, 2002:85). However, the term *early literacy* seems to be preferred by several authors (Boudreau and Hedberg, 1999:249; Justice and Ezell, 2001:123, 132; Justice, *et al*. 2002:84; Larrivee and Catts, 1999:126).

Early literacy is used to refer to the reading and writing behaviours and notions normally attained by children during the pre-school years (Justice and Ezell, 2002:21; Kaderavek and Sulzby, 1998:33). Early literacy forms the basis for the subsequent achievement of higher linguistic skills that include reading and writing (Justice and Ezell, 2002:257). The essential importance of early literacy skills is that they pave the way for the transition to conventional literacy levels that will play an important role in the routine aspects of education (Justice and Ezell, 2002:17-18; Kaderavek and Sulzby, 1998:33).

As literacy is the principal means for learning new information in the school setting, literacy difficulties might impact on academic achievement (Boudreau and Hedberg, 1999:249). In the long term, related aspects such as self-esteem, motivation and occupational outcomes might also be affected (Boudreau and Hedberg, 1999:249, 256). Research suggests that first-graders exhibiting poor phonological awareness typically have difficulty in learning spelling-sound (grapheme-phoneme) correspondence, with this “slow start” resulting in a more than two year delay by the fourth grade (Van Kleeck, Gillam, and McFadden, 1998:66). Reading performance can be influenced by children’s insight into their own reading capabilities as early as the latter part of their second school year (Gillon, 2000:138). Hence, early intervention with children at risk for literacy problems is particularly important (Gillon, 2000:139; Roth and Baden, 2001:163).

Oral language proficiency, specifically the phonological awareness component, has been found to be interrelated with children's early literacy skills (ASHA, 2000:277; ASHA, 2001:355; Catts, Fey, Zhang and Tomblin, 2001:38; Lewis, Freebairn and Taylor, 2000:12; Roth and Baden, 2001:163). The established, reciprocal relationship between phonological awareness and early literacy skills has been well investigated and verified in numerous studies (Major and Bernhardt, 1998:413; Rivers and Lombardino, 1998:369; Stackhouse, Wells, Pascoe and Rees, 2002:28). Therefore, difficulty in one area is usually seen in association with difficulty in the other and increased skill and understanding in one commonly promotes skill and understanding in the other (ASHA, 2000:277; ASHA, 2001:355). Verbal language provides the base for the development of both reading and written orthography, as the latter represents the sounds of speech (Larrivee and Catts, 1999:118; Silliman, Bahr, Beasman and Wilkinson, 2000:267). Reading is an intricate act involving advanced semantic and syntactic linguistic comprehension and decoding skills (word recognition processes) and is influenced by several linguistic, cognitive and social factors (Gillon, 2000:126; Kamhi, Allen and Catts, 2001:175). At present, spelling is also viewed as a language-based ability in which insight regarding the linguistic composition of language (i.e. phonological, orthographic and morphologic knowledge) is an essential constituent (Apel and Masterson, 2001:182; Gillon, 2002b:4; Scott and Brown, 2001). It has been suggested that spelling is a more arduous process than reading (Lombardino, Bedford, Fortier, Carter, and Brandi, 1997:334; Scott and Brown, 2001). Spelling offers more phoneme choices, involves a graphic-motor component and requires full knowledge of all phoneme-grapheme correspondence from the earliest stage, while words can occasionally be read despite lack of knowledge of phoneme-grapheme correspondence (Lombardino, Bedford, Fortier, Carter, and Brandi, 1997:334; Scott and Brown, 2001).

Several studies have indicated a greater risk for later academic difficulties for children with language impairments, specifically with regard to literacy acquisition (Boudreau and Hedberg, 1999:250; Catts, Fey, Tomblin and Zhang, 2002:1142; Lewis, Freebairn and Taylor, 2000:12; McFadden, 1998:5). This relationship calls for an increased participation of the speech-language therapist in advancing early literacy skills, especially with children already receiving speech-language intervention (Justice, *et al*. 2002:86).

As specialists in the realm of spoken and written language development, assessment and remediation, speech-language therapists find that their role in literacy development and the cultivation of emerging literacy skills is increasingly recognized (Ehren and Ehren, 2001; Kamhi, Allen and Catts, H.W. 2001:175; Roth and Baden, 2001:164). Thus, the scope of practice for speech-language therapists inevitably includes the following: the prevention of written language problems, the identification of children at risk for reading and writing problems, assessment of reading and writing abilities, provision of intervention and supplying assistance and information to educators, parents and students (ASHA, 2002:278; Roth and Baden, 2001:163-164; Scott and Brown, 2001).

Evidence suggests that intervention implemented at a period before a young child has developed a self-concept as a poor reader, might prevent possible reading and spelling difficulties, further preventing the forming of a negative self concept with associated behavioural problems (Catts, 1997:86; Gillon, 2002a:382). Research increasingly suggests that children normally possess notable early literacy skills even at a pre-school age (Justice, Weber, Ezell, and Bakeman, 2002:32). Ensuring accurate early identification of children who are experiencing difficulty in attaining critical early literacy skills is important. Thus, possible future reading problems can be identified and prevented, or at least lessened with appropriate intervention before formal reading instruction commences (Catts, Fey, Tomblin and Zhang, 2002:1155; Justice, *et al*., 2002:85; Lombardino, Morris, Mercado, DeFillipo, Sarisky, and Montgomery, 1999:136; Rivers and Lombardino, 1998:371). The prevention of reading problems is easier and more time and cost effective than the remediation of such problems (Catts, Fey, Zhang and Tomblin, 2001:45).

The following informal tasks have commonly been used to examine children's emergent and early literacy abilities (Justice, *et al*., 2002:88-90):

- Written language awareness: This is the implicit and explicit knowledge of print, which includes young children's emergent awareness of the form and function of print, as well as the relation of written language to oral language (Justice and Ezell, 2002:17-18; Justice, Weber, Ezell and Bakeman, 2002:30). Phonological awareness and written language awareness form the foundation

for later reading development and both serve as important predictors of later reading ability (Justice and Ezell, 2001:123-124; Justice and Ezell, 2002:18; Justice, Weber, Ezell and Bakeman, 2002:30). These skills seem to develop during pre-school years before the commencement of formal reading instruction (Justice and Ezell, 2001:123; Justice and Ezell, 2002:17; Justice, Weber, Ezell and Bakeman, 2002:30). This awareness of written language usually directs natural participation in writing activities, commencing with unconventional writing in the form of proto-writing (scribbling) and gradually developing to the level where narratives can be produced (Edmiaston, 1988:33-34).

- Phonological awareness: Phonological awareness is a metalinguistic skill that can be defined as the explicit awareness of the sounds of spoken language as separate from the meaning (Kay-Raining Bird, Cleave and McConnell, 2000:320; Major and Bernhardt, 1998:414; Stackhouse, Wells, Pascoe and Rees, 2002:28). This involves the ability to reflect on, manipulate and separate the structural components of words and may also include recognition of suprasegmental features (e.g. stress, intonation) (Masterson and Crede, 1999:244; Rivers and Lombardino, 1998:369). These skills are important even prior to the commencement of formal reading so as to develop fluent reading in an alphabetic language (e.g. English) (Rivers and Lombardino, 1998:369-370). Phonological awareness is the combined outcome of auditory, articulatory and orthographic experience (Burt, Holm and Dodd, 1999:313; Stackhouse, Wells, Pascoe and Rees, 2002:28). It develops along a continuum of implicit to explicit awareness, starting with the awareness of larger units (such as syllabic units) and leading to phoneme awareness, which is the grasp of smaller intra-syllabic units (Burt, Holm and Dodd, 1999:313; Stackhouse, Wells, Pascoe and Rees, 2002:28). It has been suggested that phonemic awareness, which is at the highest level in the hierarchy of phonological awareness skills, is the most accurate in predicting early literacy achievement when compared to other variables (Gillon, 2002b:382; Lombardino, Bedford, Fortier, Carter and Brandi, 1997:334).
- Letter name knowledge: This refers to children's knowledge of individual letter names (Justice, *et al*., 2002:89). Although the significance of this skill has been debated, research has shown that the knowledge of letter names

exhibited by children is predictive of early reading capability to the same or a larger extent as phonological awareness measures (Justice, *et al*., 2002:89; Kamhi, Allen and Catts, 2001:176, Roth and Baden, 2001:169). Children who struggle to learn letter names are habitually slow in attaining word decoding skills (ASHA, 2000:278). In addition, experience with a letter name facilitates letter-sound associations, which is central to correct word recognition (Kamhi, Allen and Catts, 2001:176; Roth and Baden, 2001:169).

- Grapheme-phoneme correspondence is viewed as the essential ability to accurately represent the distinct connection between letters and sounds, i.e. sound-symbol relationships (Justice, *et al*., 2002:89). Children typically acquire these skills in the later stages of literacy development and this knowledge is usually taught to children by teachers and parents (Justice, *et al*., 2002:89). Research suggests that this is one of the strongest predictors of early literacy achievement and it is a prerequisite for effective decoding skills, i.e. the word recognition procedures that convert print to words (Justice, *et al*., 2002:89; Kamhi, Allen and Catts, 2001:177; Lombardino, *et al.*, 1999).
- Literacy motivation: This refers to children's interest in or orientation towards early literacy experiences (Justice, *et al*., 2002:89). The results of several studies suggest that a significant relationship exists between children's early literacy development and their interest and participation in literacy-related activities (Justice, *et al*., 2002:89).
- Home literacy (Justice, *et al*., 2002:89): Home literacy refers to the significant role the home environment plays in supporting the development of early literacy skills (Justice, *et al*., 2002:89). Some of the key factors that influence the attainment of early literacy skills are the frequency of parent-child shared book reading; the access children have to literacy materials, parental interest and parents' participation in their own literacy activities (Justice, *et al*., 2002:89). Children with regular home literacy experiences exhibit higher literacy skill levels than their peers with infrequent home literacy experiences (Justice, *et al*., 2002:89-90).
- Narrative abilities (Boudreau and Hedberg, 1999:252): Although Justice, *et al*. (2002:93) did not identify this aspect, it was included in the Preschool Literacy Assessment by Edmiaston (1988:31-32). Oral narrative ability has been suggested by researchers to be one of the foremost factors linked to the

> acquisition of emergent and later literacy acquisition, especially regarding aspects such as understanding a story text, the initial recognition that written language holds meaning and further insights into literacy (Edmiaston, 1988:31-32; Boudreau and Hedberg, 1999:250; Kaderavek and Sulzby, 2000:35). Other research data have demonstrated that complex narratives produced by children lead to the internalisation of written language patterns (Kaderavek and Sulzby, 1998:35). However, in a study by Boudreau and Hedberg (1999:256), narrative measures were found not to be significantly related to non-narrative tasks such as print-related concepts and phonological awareness and rather to be only predictive of other narrative tasks.

In order to identify, assess, and provide intervention for children who do not exhibit the expected early literacy skills as compared to their peer group, speech-language therapists need to possess the knowledge of exactly what early literacy skills are considered typical or expected for a specific group (Gillon, 2002b:6). The role of literacy in a society or group is influenced by the social circumstances and culturally specific traditions of that group (Winer, 1992:13). Thus the role and development of literacy cannot be studied without consideration of these factors (Winer, 1992:13). In the South African context, this implies the compilation of norms for the different population groups. These groups are usually highly heterogeneous due to variables that can influence the development of early literacy skills, such as home language and socio-economic status. For example, children from culturally diverse backgrounds may have unique problems with phonological awareness (Behrmann, 1995). Children's insight regarding the phonological features on which a language is built, can be influenced by factors such as exposure to language at home, exposure to reading at an early age, and dialect (Behrmann, 1995). Even the development of spelling is heterogeneous and is directed by linguistic factors (Bourassa and Treiman, 2001:172-173).

Another example of the influence of culture on early literacy development can be seen in narratives. Cross-cultural studies have shown that narrative production is related to the interpreted purpose and context of the narrative relative to the child's cultural use of narratives (Crais and Lorch, 1994:14). Depending on the culture, narratives produced by children of different cultures can vary in aspects such as

length, the story constituents offered by the storyteller and story order (Crais and Lorch, 1994:14-15). In South Africa, it is generally believed that stories and storytelling are daily occurrences in traditional black African homes (Winer, 1992:139). However, in a study to design and implement an early literacy programme in farm nursery schools for black African children in South Africa, investigation of this belief revealed that there are no fixed story times and that stories are mostly told when a moral rationale needs to be passed on (Winer, 1992:139).

Besides the influence of language differences, the role of poverty is especially significant in South Africa. In 2001, it was estimated that there were 3,8 million income-poor South African children, estimation expected to climb due to the contraction of the formal sector and the impact of HIV/ AIDS (Krafchik and Streak, 23.2.2001). Limited access to health care services due to socio-economic constraints can result in children experiencing concentration difficulties or cause regular absenteeism from school due to more frequent illnesses (Roseberry-McKibbin, 2002:1). Additionally, untreated middle ear infections can result in poorer auditory processing, language and articulation skills (Roseberry-McKibbin, 2002:1). Childhood malnutrition can diminish cognitive development by causing permanent, structural damage to the brain (Roseberry-McKibbin, 2002:2). These factors can contribute to impeding the development of early literacy skills by hindering the normal development of skills associated with early literacy skills, such as oral language skills, articulation and auditory perception. Finally, lower educational levels of parents, associated with lower income levels, are linked to fewer opportunities for language stimulation and early literacy attainment of young children (Justice and Ezell, 2001:124; Roseberry-Mckibbin, 2002:2). Children from higher socio-economic backgrounds have been found to have superior achievement on standard verbal and literacy measure tasks (Burt, Holm and Dodd, 1999:315). Consequently, it stands to reason that the early literacy skills of an African language speaking child living in low socio-economic circumstances will develop differently from that of a middle class, English speaking child.

At this stage, data on the development of early literacy skills for the different South African populations is limited. Presently, no formal measures for the development of early literacy skills exist that can be employed with these groups. However, this is

increasingly addressed by other exploratory studies. Based on literature, McCord (2000:5) compiled a contextually appropriate phonological awareness test for a group of multilingual grade 1 learners. The home languages of the participants included Sepedi (Northern Sotho), Zulu, Xhosa, French, South Sotho, Urdu and Tswana (McCord, 2000:10). Although this study demonstrated the viability of evaluating the phonological awareness of this specific group, the results cannot be generalized because of the small sample, wide age range of subjects and the limited area to which the study applies (McCord, 2000:43-44). In another study, an assessment protocol for pre-literacy skills of pre-school children was adapted to be more suitable for the urban South African context (Verwoerd, 2000:4). The assessment protocol employed in this study combined the procedures utilized by Edmiaston (1988:29-34) and Clay (1979), as utilized by Verwoerd (2000:10). However, only certain components of early literacy were included, i.e. situation-dependent print, book handling skills and reading conventions, the stages of written language production and children's retelling of familiar stories (Verwoerd, 2000:7-12).

One method of addressing the limited data on the development of early literacy skills for the different South African populations is the utilization of clinician-designed tasks (Justice, *et al*., 2002:92). Thus, the development of clinician-designed tasks with normative data to identify children experiencing difficulty in developing early literacy skills within a specific group is important. This is further underscored by the interrelationship between language, culture and beliefs, which necessitates the employment of material specific to the South African context (Verwoerd, 2000:4). The use of clinician-designed tasks for a specific South African context has several advantages:

- Costs are reduced since available materials can be utilized (Justice, *et al*., 2002:92).
- Tasks targeting specific, critical components of early literacy can be developed (Justice, *et al*., 2002:94).
- The informal tasks used can assist in monitoring literacy intervention efficiency (Gilbertson and Bramlett, 1998:114; Justice, *et al*., 2002:94).
- In contrast to norm-referenced materials that are mainly valuable in the identification of delayed early literacy skills, individual performance on

clinician-designed tasks can be investigated for error patterns to guide intervention efforts (Gilbertson and Bramlett, 1998:114).

- Literacy aptitude generally not assessed by traditional procedures (such as motivation, home literacy environment) can be included (Justice, *et al*., 2002:94).

The aim of this study was to collect local norms for pre-school (grade R) Sepedi speaking children residing in Atteridgeville and to determine what early literacy abilities are typical of this population. Atteridgeville is a previously disadvantaged community with low socio-economic status (Strydom, 2002). It is a multilingual African community, but Sepedi is probably the most widespread language used. It was hypothesized that the data collected from this study would allow the speech-language therapist or any other relevant party to consider the unique development of early literacy skills in this group and would help to further the understanding of the effects of the language-learning milieu on these skills (Gillon, 2002b:6). A series of tasks was administered that examined different aspects of early literacy, with preference given to aspects closely linked to literacy achievement (Justice, *et al*., 2002:92-94). For the purpose of this study, the following aspects of early literacy were included: written language awareness, narrative abilities, phonological awareness, letter name knowledge, grapheme-phoneme correspondence and literacy motivation. Although home literacy was included by Justice, *et al*. (2002:93), this study was limited to the performance of children on early literacy tasks. The direct involvement of parents thus fell beyond the scope of the study. According to Justice, *et al*. (2002:93), an assessment of home literacy would entail a questionnaire that is administered to parents and a home visit in order to determine the frequency and nature of home literacy opportunities. However, the unique South African context should be considered so that this study remains relevant and practical. As early as 1994, it was stated that speech-language therapists working in South Africa usually have large caseloads, with patients that are seldom able to obtain services on a regular basis due to costs and their distance from these services (Tuomi, 1994:5-6). These problems are also reflected in the educational setting where access to parents is limited. Many parents work away from home and other family members care for children. Unemployed parents might not have the means to travel in order to participate. By providing services at schools for children, speech-language therapists

might provide children with the services they need, even though the problems experienced by parents are not addressed. Furthermore, home visits are not possible for many South African therapists due to various reasons, such as limited time and financial resources (Tuomi, 1994:5-6). Although the importance of home literacy is fully acknowledged, the inclusion of home literacy was not practical and not reflective of the current work situation of speech-language therapists in South Africa.

2. Methodology:

2.1. Aims:

The aim of this study was to compile data on the typical development of early literacy in a group of typically developing pre-school Sepedi first language children, by determining their performance on a series of early literacy tasks. In order to achieve the aim, the following objectives were identified:

2.2 Objectives:

Preliminary study:

Objective 1: To construct a protocol with culturally relevant tasks and stimulus materials to assess the main components of early literacy in the identified group of children.

Main study:

Objective 2: To describe the early literacy development of the subjects based on the results of the compiled protocol.

Objective 3: To identify relevant risk criteria that may indicate delayed early literacy development in the identified population.

2.3 Research design

A descriptive empirical survey research design was used (Mouton, 2003:152-153). Primary data was used in the gathering of numeric data. This research design allowed for a descriptive review of the performance of a representative sample of a large population (Mouton, 2003:152-153). The design was considered relevant since this study was exploratory in nature and required only a medium degree of control in the design structure (Mouton, 2003:152-153). With this design, convenience sampling could be utilized and data was collected through structured tasks (Mouton, 2003:152-153). Although a descriptive empirical survey is inclined to be context specific, an appropriate sample design will allow for generalisation to larger populations, high measurement reliability and construct validity (Mouton, 2003:152-153).

2. 4. Sample:

2.4.1 Population:

For convenience, 20 Sepedi (Northern Sotho) speaking children, residing in Atteridgeville, Pretoria and attending Grade R were selected for this study. Atteridgeville is a previously disadvantaged community with overall low socio-economic status (Strydom, 2002).

2.4.2 Criteria for selection:

The participants were expected to meet the following criteria:

- Participants were required to be between 5 years 8 months and 6 years 8 months of age at the time of the study, as children are in their pre-school year the year in which they turn six. The aim of the study was to determine the emergent literacy skills of this specific population.
- All participants were required to attend Grade R (reception class) in a school situated in Atteridgeville, with Sepedi as the language of learning and teaching, specifically of the foundation phase.
- Participants were required to have normal peripheral hearing, since a hearing loss may significantly influence language development, which in turn has been shown to be interrelated with early literacy skills (Owens, 1995:424; Roth and Baden, 2001:163).
- For the purpose of this study, participants were required to be proficient in Sepedi as their first language since the aim of the study was to determine the early literacy skills of this specific population. Formal language measures were not employed, since no standardized procedures for assessing language proficiency for the specific population were available. The language proficiency of each participant was determined by the educator's judgement of the participant's language proficiency, as it was assumed that the educator would have observed the language skills of the participant in various contexts.
- Any children, of whom the educator suspected a marked impairment in cognitive abilities or speech development as compared to their peers, were

excluded, as these factors have been shown to correlate with early and later literacy problems (Justice, *et al*., 2002:87).

- No participants with attention deficits or behavioural problems were included, since these factors are associated with weaker achievement on early literacy tasks (Justice, *et al*., 2002:89).
- Absence of any reported neurological, sensory or emotional disorders was a prerequisite as these disorders have been suggested to influence task performance (Boudreau and Hedberg, 1999:251).
- Gender: Some conflicting research findings regarding phonological awareness and reading abilities suggest girls' capabilities to be advanced compared to that of boys (Burt, Holm and Dodd, 1999:315). For the purpose of this study, both genders were included although equal representation was not possible.

2.4.3 Selection procedures:

A non-probability convenience sampling method was used. This method uses participants that are readily available (Leedy and Ormrod, 2005:206). The advantages of this method are convenience, economy and the easy obtainment of a large sample size (Mahioodin, 2000). The disadvantage of non-probable convenience sampling is that the readily available participants are most likely not a random sample of the overall population (Leedy and Ormrod, 2005:206).

A list of primary schools in Atteridgeville was obtained and all primary schools listed were contacted telephonically in order to determine what the language medium of instruction was and if the school had a Grade R (reception) class. Of these schools, only one school was willing to participate. Written permission was obtained from the principal and parents to proceed and only subjects whose parents gave written permission were included in the research.

2.4.4 Sample size:

Twenty subjects from one school were included in the study.

2.4.5 Description of sample

All the subjects in the study complied with the specified selection criteria. The most pertinent characteristics of the subjects are summarized in Table 1.

School-related achievement was included so that information could be obtained on the development of emergent literacy skills representing children across the continuum of school related achievement. This is indicated as under average, average and above average, as determined by the educator and the participants' performance at that stage.

The mother's literacy level of all participants was included since research documented that family income and a mother's education level are stronger predictors of a child's academic success than ethnic background or language ability (Roseberry-McKibbin, 2002:2).

Table 1: Characteristics of the subjects that participated in the study

Subject	Gender	Age	School related achievement	Mother's literacy level/ level of education
1	Female	6years 1month	Under average	Primary
2	Male	6years 3months	Above average	Matric
3	Female	6years 4months	Average	Matric
4	Female	6years 9months	Above average	Matric
5	Male	5years 9months	Average	Grade 8
6	Male	6years 6months	Average	Matric
7	Female	6years 3months	Average	Grade 8
8	Female	6years 2months	Average	Matric
9	Male	5years 11months	Average	Primary
10	Female	6years 6months	Above average	Matric
11	Male	5years 11months	Under average	Primary
12	Male	6years 3months	Under average	Grade 8
13	Female	5years 10months	Average	Primary
14	Female	6years 6months	Average	Grade 8
15	Male	6years 5months	Under average	Primary
16	Male	6years 7months	Average	Grade 8
17	Male	6years 7months	Average	Primary

18	Female	6years 4months	Average	Matric
19	Female	6years 3months	Average	Matric
20	Male	6years 1month	Average	Matric

24 letters explaining the purpose, time span, range and location of the study were distributed to the children who met the subject criteria (Appendix C). Six children did not meet the subject criteria and did not receive letters due to the following:

- 4 children are not Sepedi-speaking.
- 1 child did not meet the age criterion.
- 1 child was identified by the educator as a child with a severe developmental and suspected cognitive delay.

Of the 24 letters distributed, 21 were returned.

2.5. Ethical issues:

Research ethics principles, such as autonomy, beneficence, non-malfeasance and justice were pursued throughout the study.

Primary schools that were identified fall under the jurisdiction of the Gauteng Department of Education. As per their Strategic Policy Development, Management and Research Coordination Directorate, the following were submitted to the Department of education:

- The Departmental Research Request (Appendix A).
- A full research proposal.
- A list of the institutions involved in the research project.
- A schedule for the research.

A letter granting permission to do the research was received (Appendix J). The research proposal was also submitted to the Ethical Committee of the University of Pretoria for review and permission was obtained to conduct the research (Appendix I). Schools that were identified as suitable were contacted again. An appointment was made with the principal of each school. The purpose, range, time span, location and impact of the study on the normal school program was explained and also presented in writing (Appendix B). After written consent was obtained from the Department of Education and school principal, permission forms, which disclosed the purpose, range, time span and location of the study, were distributed to the parents

of suitable participants in both English and Sepedi, to ensure that informed consent was given (Appendix C). It was indicated that the results of the study would be available to parents (O'Toole, Logemann and Baum, 1998:259). Autonomy and beneficence were ensured by ensuring that participation was anonymous and by ensuring that participants knew that participation in the study was strictly voluntary and that they could withdraw at any time. Finally, participation in the study did not expose participants to any form of harm.

2.6. Material and apparatus

2.6.1 Material and apparatus used for subject selection

- Record form for recording information obtained during selection procedures (Appendix D)
- Interacoustics Impedance Audiometer AZ26 for hearing screening to determine whether participants met the selection criteria.

2.6.2 Material and apparatus used for data collection

- Preliminary study record form (Appendix E). The form was used to record the data gathered during the preliminary study.
- Preliminary study stimulus material (Appendix F). The stimulus material represented certain core concepts and vocabulary, as well as material that would be used in the main study, in order to determine the appropriateness of the material and procedures to be utilized in the main study.
- Protocol form (Appendix G). This form was drawn up to represent all the significant aspects of early literacy as identified by Justice, *et al*. (2002:93). The form was designed to be used as a record form with the necessary material. The material to be used, the scoring, procedure to be followed and instructions in both English and Sepedi were also written on the form for convenience.
- The stimulus materials (Appendix H) and the tasks for which they were used are summarized below in Table 2. All pictures utilized were obtained from Masterclips, Mediapaq Browser Version 2.04 (1996). All written stimuli were

typed with Century Gothic font (Microsoft Word), as utilized by Gillon (2000:130).

Table 2: Summary of material employed

<table>
<tr><th>Description of material</th><th>Task/ activity for which was utilized:</th></tr>
<tr><td>A book titled “Henry’s wagon” (Dikeman, 1991) was utilized. It was necessary to use a familiar book to assess narrative abilities (Edmiaston, 1988:32). The same book was used throughout the study, so that target items remained constant.</td><td>Knowledge of print and book reading conventions.

Narrative abilities</td></tr>
<tr><td>A set of 10 cards depicting four different written language concepts, were developed based on the study by Justice and Ezell (2002:21). Targets and stimuli were selected based on the examples used in studies by Justice and Ezell (2001:127; 2002). Each card of 19cm by 13,5 cm was divided in quarters and one item was depicted in each quarter. Items specifically named as examples by Justice and Ezell (2001:127; 2002) and that was used by them, are printed in bold in this table. The target concepts and the items depicted on the cards were as follows. .
<table>
<tr><th>Target concept</th><th>Represented by</th><th>Foils:</th></tr>
<tr><td>Word:</td><td>up</td><td>=, smiley face , the letter D</td></tr>
<tr><td>Letter:</td><td>m</td><td>7, “no right turn” sign, I saw a big house.</td></tr>
<tr><td>Number:</td><td>4</td><td>♣, Generations, +</td></tr>
<tr><td>Sentence:</td><td>Spot baked a cake</td><td>No parking sign, w, taxi</td></tr>
<tr><td>Reading:</td><td>picture of a child reading</td><td>1+1=2, ! (exclamation mark), ŧ (cross)</td></tr>
<tr><td>Writing:</td><td>my name is Bill (cursive writing was used for the sentence)</td><td>Picture of scissors, a square, arrow</td></tr>
<tr><td>Capital letter:</td><td>B</td><td>Triangle, star, 10</td></tr>
<tr><td>Lower case letter:</td><td>t</td><td>% (percentage), sentence, wheelchair friendly sign</td></tr>
<tr><td>Question mark:</td><td>? (Question mark)</td><td>Telephone sign, 147, no smoking sign</td></tr>
<tr><td>Print</td><td>Paragraph of print</td><td>Picture of the sun, no dogs allowed sign, symbol for electric globe</td></tr>
</table>
</td><td>Discrimination and orientation of written language symbols</td></tr>
<tr><td>Two sets of flashcards, as described by Justice and Ezell (2002:20-21).
• The first set of cards assessed orientation. On each card one target grapheme was presented over a set of four alternatives, of which one matched the target grapheme. The other alternatives differed in orientation and were printed upside down, sideways and diagonally. Letters depicted were: s, e, d, w, t, r, a, y, f, g.
• The second set assessed discrimination. One grapheme was printed on a card over four alternative graphemes, of which one was a match. The following letters were used, followed by the three foils (in brackets): b (p, l, n); m (u, n, h); d (p, b, a); o (c, a, q); s (f, g, z); k (l, f, x); v (y, w, u); r (l, m, n); h (n, u, m); i (L, j, t).</td><td>Discrimination and orientation of written language symbols</td></tr>
<tr><td>▪ Whiteboard and whiteboard marker to write stimuli names (the researcher wrote names familiar to the child as the aim of this task was to determine whether the child could identify the names).
▪ Logos, pictures of traffic signs and product names representing the following aspects were selected based on their high prevalence in the environment of the sample population. The specific stimuli utilized were determined by the results of the preliminary study. The product labels were removed from the container with print and non-print graphic cues still preserved and were mounted on 9,5cm by 7cm white cards.
<table>
<tr><td>Common logos</td><td>Telkom, Police, Cell C</td></tr>
<tr><td>General household product names</td><td>OMO, Zambuk, Kiwi shoe polish</td></tr>
</table>
</td><td>Situation dependent print:</td></tr>
</table>

<table>
<tr><th colspan="2">Description of material</th><th>Task/ activity for which was utilized:</th></tr>
<tr><td>Food products</td><td>Simba, Coke, Pilchards.</td><td rowspan="5">Situation dependent print:</td></tr>
<tr><td>Traffic signs</td><td>Stop, traffic light, speed limit</td></tr>
<tr><td>Toy names/ logos</td><td>Dragonballz, Takalani Sesame, Barney</td></tr>
<tr><td>Functional logos</td><td>Man, hospital/ ambulance, exit.</td></tr>
<tr><td>Names/ items of high personal interest</td><td>Teacher's name, school's name, town name.</td></tr>
<tr><td colspan="2">Pencil and paper</td><td>Written language productions</td></tr>
<tr><td colspan="2">Four coloured pictures representing a dog (mpsha), man (monna), cat (katse) and water (meetse).</td><td>Phonological awareness: alliteration awareness</td></tr>
<tr><td colspan="2">Pictures of a pick (peke), shelf (raka).</td><td>Phonological awareness: analysis</td></tr>
<tr><td colspan="2">▪ Tokens
▪ Picture of girl</td><td>Phonological awareness: phoneme count</td></tr>
<tr><td colspan="2">Two sets of alphabet cards.
<u>Set 1</u>: 26 cards depicting all the letters of the alphabet in lower case.

<u>Set 2</u> 26 cards depicting the lower case letters of the alphabet in random order, so that rapid letter naming ability was assessed rather than the ability to recite the alphabet. The cards were numbered to ensure that the presentation order of the stimulus material remained constant. Letters were numbered in the following order: b, n, x, f, q, j, r, o, g, w, e, y, k, s, c, u, z, p, t, i, m, a, v, l, d.</td><td>Letter name knowledge, i.e.
• Knowledge of the alphabet (expressive task).
• Rapid letter naming ability</td></tr>
<tr><td colspan="2">2 cards were used as practice items depicting the letters A with a picture of an apple (apola) and K with a picture of a cat (katse).
10 cards depicted the following lower case letters without other visual cues: s, l, p, m, t, o, f, l, r, b.</td><td>Grapheme-phoneme correspondence</td></tr>
<tr><td colspan="2">Pictures of literacy activities, i.e.
• A child reading
• A child writing/ drawing
Pictures symbolizing emotions, i.e.
• Happy face
• Frowning face</td><td>Literacy motivation</td></tr>
</table>

2.7. Procedures:

2.7.1 Training of the interpreter

As the researcher has limited proficiency in Sepedi, the use of an interpreter was necessary. The interpreter who was utilized in the study was a final year student in education and she was working as a general assistant at a school for Sepedi-speaking learners with special educational needs.

Training preceded both the preliminary study and the main study in order to familiarize the interpreter with the procedures and materials that were to be utilized. The purpose of the study was explained to the interpreter on each occasion. Role-play was utilized to train the interpreter, since interpreting skills are mainly taught by means of simulated real-life situations (Corsellis, 1999:202; Lotriet and Ceronio, 1999:244). Role-play in English was used to demonstrate the procedures to the interpreter (the researcher acted as the interpreter, the interpreter acted as the participating child). Thereafter, the interpreter practiced the procedures on another Sepedi-speaking adult in order to become more familiar with the procedures. At the same time, the researcher practiced the scoring procedures. Finally, “on-the-job” training was also employed where the interpreter practiced the procedures with a Sepedi child while the researcher practiced the scoring method. (Van Dessel, 1999:213). Continuous feedback was given to the interpreter (Corsellis, 1999:203).

As the interpreter was a volunteer, the interpreter was assured that she was free to withdraw from the project at any time, should she choose to do so.

2.7.2 Preliminary study:

The objective of the preliminary study was to determine the appropriateness of the material, core concepts and procedures that were to be used, as well as to identify aspects that needed to be modified to be more culturally relevant. This was done to ensure the validity of the procedures utilized.

Five subjects who met the selection criteria, representative of both genders and of the target population, were tested. The preliminary study was conducted in Sepedi, with the help of the trained assistant who also served as interpreter.

The protocol (Appendix G) was examined to identify vocabulary, concepts, tasks and stimulus material that might be unfamiliar to the participants. These aspects were evaluated with the preliminary study. The procedures, material and results of the preliminary study are summarized in table 3. Some of the stimulus material was used in both the preliminary study and the main study, although some material was specifically developed for the preliminary study (Appendix H). Information obtained during the preliminary study was recorded on a record form (Appendix E).

Certain concepts were evaluated with both visual and auditory stimuli. This was done to ensure that the presence of either a visual or auditory perception problem did not distort the results of the preliminary study. Concepts that were evaluated in this way were: “Begin/ start”, “longest” and “in”.

Items and procedures were deemed appropriate when at least 80% of the participants (i.e. 4 participants) were familiar with the concept, were able to recognize the stimulus material and were able to perform a task (Verwoerd, 2000:19).

Table 3: Summary of the aspects evaluated, procedures, material and results of the preliminary study

Aspects evaluated	Procedures and material:	Results
Task: The interpretation of line drawings / two dimensional stimulus material since mostly two-dimensional material would be used in the main study.	The participating children were asked to identify three line drawings depicting a house, car and pen.	60% of the participants were able to identify all three pictures, but two participants could not identify the picture of a pen. Since the same picture could not be identified, it was discussed with the educator and the interpreter who conceded that the picture looks more like a roller ball pen and was not really representative of the ball point pens the children were familiar with. This task was concluded to be appropriate despite the lower percentage, which was attributed to the material that was probably culturally inappropriate.
Vocabulary items that were to be used in instructions: Front	The participating children were asked to place an object in front of them.	100% of the participants were able to execute the task and the vocabulary/ concept was determined to be appropriate.
Vocabulary items that were to be used in instructions: Name	The participating children were asked to name one of the other participants or to give the name of the school.	100% of the participants were able to execute the task and the vocabulary/ concept was determined to be appropriate.
Vocabulary items that were to be used in instructions: Top/ bottom	The participating children were shown a picture of a tree and asked to identify the top and the bottom of the tree.	100% of the participants were able to identify both the top and the bottom and the vocabulary was determined to be appropriate.
Vocabulary items that were to be used in instructions: Begin/ start	i. The participating children were shown a picture of a race and asked to point to the beginning of the race or where the race starts. ii. A recording of three non-speech sounds (i.e. an ambulance, music and a cell phone) was played and the children were asked what sound was at the beginning.	100% of the participants were able to identify the beginning of the race. In addition, 60% of the participants were able to identify the first sound (the sound at the beginning). The lower percentage that was obtained for the auditory task might be attributed to the complexity of the auditory task that required discrimination, sequential memory and knowledge of the vocabulary evaluated. Since 100% of the participants were able to identify the beginning, the vocabulary/ concept was concluded to be appropriate.
Vocabulary items that were to be used in instructions: Longest	i. Three lines of different lengths were presented and the participating children were asked to identify the longest one. ii. A recording of two non-speech sounds was played and the children were asked to identify the longest sound.	100% of the participants were able to identify the longest line and 80% were able to identify the longest sound. The vocabulary/ concept was thus concluded to be appropriate.
Vocabulary items that were to be used in instructions: Same/ Different	5 cards, of which two were the same, was presented and the children were asked to identify the cards that were the same and then two cards that were different.	A 100 percentage was obtained for both tasks and the vocabulary/ concept was thus concluded to be appropriate.
Vocabulary items that were to be used in instructions: Parts/ pieces	"Bob the builder" three-piece puzzles were presented to the participating children and the children were requested to hand the interpreter one part/ piece of the picture. .	100% of the participants were able to perform the task and the vocabulary/ concept was thus concluded to be appropriate.

Aspects evaluated	**Procedures and material**:	**Results**
Vocabulary items that were to be used in instructions: Whole	A set of two identical pictures of an elephant was presented, with one of the pictures in the set cut in half. The children were asked to identify the one that was "whole".	100% of the participants were able to perform the task and the vocabulary/ concept was thus concluded to be appropriate.
Vocabulary items that were to be used in instructions: In	i. The children were shown a picture made up of different shapes. A picture of a circle was shown and the children had to indicate whether the circle appears in the picture. ii. A recorded sound segment of different sounds was played and the children were asked whether a car hooter was also in the sounds.	100% of the participants were able to perform both the tasks and the vocabulary/ concept was thus concluded to be appropriate.
Vocabulary items that were to be used in instructions: Sound	The participating children were asked to clap their hands every time a sound was heard. A recording of a music instrument producing four sounds was presented.	100% of the participants were able to perform the task and the vocabulary/ concept was thus concluded to be appropriate.
Vocabulary items that were to be used in instructions with pictures depicting the emotions: Happy/ sad	The participating children were requested to identify a happy picture and a sad picture. Three pictures were shown, i.e. one picture depicting happy, one sad and one foil.	80% of the subjects were able to identify the appropriate pictures. The material was concluded to be appropriate.
Determine stimulus materials that are the most suitable in each category:	Five stimulus cards per category were presented to determine which three were the most appropriate for this specific group. The following stimulus material was presented on 80mm by 65mm cards.	Either the specific label name or the generic name was accepted as correct responses (Edmiaston, 1988:31). The percentage of participants that were able to identify the stimulus material is indicated in brackets.
	Common logos: Spar, Cell C, Police, Telkom, ABSA	Spar (20%), Cell C (60%), Police (80%), Telkom (100%), ABSA (20%). Most appropriate items: Telkom, Police, Cell C.
	General household product names: OMO, Colgate, Kiwi polish, Zambuk, Sunlight	OMO (100%), Colgate (60%), Kiwi polish (100%), Zambuk (100%), Sunlight (80%).%). Most appropriate items: OMO, Kiwi polish, Zambuk.
	Food products: Simba, Inkomazi, Coke, Star Pilchards, Impala Maize Meal	Simba (100%), Inkomazi (0%), Coke (100%), Star Pilchards (100%), Impala Maize Meal (0%). Most appropriate items: Simba, Coke, Star Pilchards.
	Traffic signs: Stop, Traffic light, Bus company, Pedestrian crossing, Speed limit	Stop (20%), Traffic light (40%), Bus company (0%), Pedestrian crossing (0%), Speed limit (0%). None of the stimuli were found to be appropriate, however, it was reasoned that this category should still be included in the main study with a larger sample that would corroborate these findings. For this purpose, the stimuli with the highest percentages were included and one randomly selected item. The following items were included in the main study: Stop, Traffic light, Speed limit.

Aspects evaluated	Procedures and material:	Results
	Toy names/ logos Dragonballz, Barney, Takalani Sesame, Barbie; Spiderman	Dragonballz (0%), Barney (0%), Takalani Sesame (80%), Barbie (0%); Spiderman (0%). Only the Takalani Sesame stimulus was found to be appropriate. However, it was reasoned that this category should still be included in the main study with a larger sample that would corroborate these findings. The following items were included in the main study: Takalani Sesame and two other stimulus items that were randomly selected, i.e. Dragonballz and Barney.
	Functional labels: Men, women, hospital, danger, EXIT	Men (0%), women (0%), hospital (20%), danger (0%), EXIT (0%). None of the stimuli were found to be appropriate, however, it was reasoned that this category should still be included in the main study with a larger sample that would corroborate these findings. For this purpose, the stimuli with the highest percentages were included and two randomly selected items. The following items were included in the main study: Hospital/ ambulance, man, exit.
Knowledge of the alphabet can be assessed by either expressive or receptive tasks (Justice, L.M. and Ezell, H.K. 2002:21; Justice, *et al*. 2002:93). Both methods were used in order to identify the most appropriate method.	For the expressive task subjects were requested to name the letter represented on the card. Ten cards were presented (Catts, Fey, Tomblin and Zhang, 2002:1147; Justice and Ezell, 2002:21). Letters found in the participant's name were used along with other randomly selected letters (Justice and Ezell, 2002:21). For the receptive task ten cards were presented in two rows of five and the subject was requested to point to the letter as its name was spoken (Catts, *et al*., 2002:1147; Justice and Ezell, 2002:21). The following letters were presented: S, B, H, Y, A, T, O, L, P, E. These letters were randomly selected (Justice and Ezell, 2002:21). White, 50mm by 90mm cardboard cards were used and letters were printed in black.	Expressive task: One subject was able to identify one letter of the ten cards presented and another subject was able to identify two letters. All other subjects were unable to correctly identify any letters. Receptive task: Two subjects were able to point out the letter A. None of the other subjects were able to indicate any of the letters. Neither of the tasks were found to be appropriate for this population, however, it was reasoned that this category should still be included in the main study with a larger sample that would corroborate these findings. The expressive task was selected to be included in the protocol, based on the personal preference of the researcher.

2.7.3 Data collection procedures

Participants were assessed individually in a quiet environment. The total assessment time for each participant was approximately 40 to 50 minutes. Positive feedback was given as encouragement regardless of the subject's performance on tasks (Fair, 2001). Practice tasks preceded assessment tasks where deemed

necessary and appropriate. The practice trials were included to familiarize the child with the task and to focus the child's attention on the tasks (Gillam and Johnston, 1985:523). Measures were administered across the identified dimensions of early literacy, namely written language awareness, phonological awareness, letter name knowledge, grapheme-phoneme correspondence, narrative abilities and literacy motivation (Edmiaston, 1988:29-34; Justice, *et al*., 2002:93). Although the assessment of home literacy by means of a home visit or parental questionnaire was also included in the protocol suggested by Justice, *et al*. (2002:93), these procedures fell beyond the scope of the study and the assessment of home literacy was thus excluded. Although report regarding home literacy by a child has been used in a previous research project (Winer, 1992:190), the reliability of this information cannot be determined.

The protocol of tasks was based on the early literacy targets as suggested by Justice *et al.* (2002:93), the pre-school literacy assessment as suggested by Edmiaston (1988:29-34) and the Early Reading Screening Instrument (ERSI) (Lombardino, Morris, Mercado, DeFillipo, Sarisky and Montgomery, 1999:139-141). Based on the results of the preliminary study, adaptations were made where materials and procedures were found to be inappropriate.

Since the aim of the study was to assess early literacy skills and not language competency, the instructions for the protocol were given at a functional language level reflective of the language patterns used in Atteridgeville. The instructions might thus not always have been grammatically correct but were easily understandable.

The instructions for administration of tasks and scoring are described, according to each category. For practicality, tasks were administered in the following order (Table 4):

Table 4: Sequence of tasks

Category	Tasks:
Written language awareness	1.Knowledge of print and book reading conventions
Narrative abilities	2. Story re-telling activity
Written language awareness	3.Discrimination of literacy terms 4.Letter orientation and discrimination 5.Situation-dependant print 6.Productions of written language
Phonological awareness	7.Alliteration detection 8.Production of a word with a target phoneme 9.Analysis 10.Phoneme count
Letter name knowledge	11.Alphabet knowledge 12.Reciting the alphabet 13.Rapid letter naming
Grapheme-phoneme correspondence	14. Grapheme-phoneme correspondence
Literacy motivation	15.Emotions associated with literacy events 16.Determining engagement level in literacy activities.

i. Written language awareness:

Written language awareness is the knowledge of print and book reading conventions, which includes book-handling skills, words in print awareness, awareness of print concepts, discrimination and orientation of written representations, awareness of situation-dependent print and productions of written language (Edmiaston, 1988:31-33; Justice and Ezell, 2002:261-262).

1.1 Knowledge of print and book reading conventions:

Subjects were asked to pick up a book that was placed upside down on the table. During a shared reading activity, the subjects were observed with regard to their handling of the book and their knowledge of specific features (Edmiaston, 1988:31-33; Justice and Ezell, 2002:261-262; Justice and Ezell, 2002:21). The subjects' knowledge of print and book reading conventions were determined by asking the subjects to identify the following aspects: The front of the book, beginning of a sentence, longest word, the space between words, the words that are read, the top, the bottom and the name of the book/ story. The interpreter used the phrase: "Show me…". Observation was used to determine whether the book was held right-side up, pages were turned one at time, pages were turned from the front to the back and whether the subject's finger ran from left to right when asked to point to words that were read (Edmiaston, 1988:31; Justice and

Ezell, 2002:261; Justice and Ezell, 2002:21). One point was awarded for each correct response or observed appropriate behaviour with a maximum of 12 points.

1.2 Discrimination and orientation of written representations of different written language units and print concepts were assessed using the following activities (Justice and Ezell, 2002:21; Justice, Invernizzi and Meier, 2002):

1.2.1 Based on the procedure as utilized by Justice and Ezell (2002:21), a set of cards was presented depicting four options. Procedures and stimuli found in other studies were duplicated in this study. For the rest of the items new stimuli were designed based on the specifications of the other stimuli. The child was asked to point to the following:

- (One) word (Justice and Ezell, 2002:261). The stimulus card depicted the following options in the four quadrants: the word “up”, the equals sign (=), a smiley face and the letter “D” (Justice and Ezell, 2001:127; Justice and Ezell, 2002:21).
- Letter (Justice and Ezell, 2001:127). The following options were depicted: the letter “m”, the number “7”, a “No right turn” road sign and a sentence “I saw a big house”.
- Number (Justice and Ezell, 2001:127). The following options were depicted: a clover (♣), the number “7”, a word “generations” and a plus sign (+).
- Sentence (Justice and Ezell, 2001:127). The following options were depicted: a “No parking” sign, the letter “w”, the word “taxi” and the sentence “Spot baked a cake”.
- Reading (Justice and Ezell, 2001:127). For the targeted unit *reading*, a picture of a child reading a book was used by Justice and Ezell (2001:127) and the stimulus was duplicated for this study. Other foil stimuli for this item included a mathematical sequence (1+1=2), an exclamation mark (!) and a cross (†).
- Writing (Justice and Ezell, 2001:127). For this target unit, Justice and Ezell (2001:127) displayed a short sentence in cursive writing. The following options were thus displayed: a single word (word), a square

with smaller squares, an arrow and short sentence in cursive writing (*my name is Bill)*.

- Capital letter (Justice and Ezell, 2001:127). The following options were displayed: a triangle, a star, a capital letter B and the number 10.
- Lowercase letter (Justice and Ezell, 2001:127). The following options were displayed: the lowercase letter "t", a percentage sign (%), a word (sentence) and a wheelchair friendly sign.
- Question mark (Justice and Ezell, 2001:127). The following units were displayed: a question mark (?), a telephone sign, the number 147 and a "no smoking" sign.
- Print (Justice and Ezell, 2001:127). The following units were displayed: a line drawing of the sun, a "no dogs allowed" sign, an electrical sign and a small paragraph of writing.

One point was allocated for each correct response with a maximum of 10 points possible.

1.2.2 Two sets of flashcards were presented, based on the procedure as adapted by Justice and Ezell (2002:20-21), to assess children's knowledge of and aptitude to attend to the visual features of graphemes. Cards were presented to the participants and the participants were expected to point to the target grapheme from four alternatives in both sets. The first set assessed orientation and the second assessed discrimination of graphemes. For the orientation task, the following letters were presented with four alternatives of the same letter but of different orientations: s, e, d, w, t, r, a, y, f, g. For the discrimination task, the following letters were presented with four alternatives (in brackets): b (b, p, l, n); m (u, n, h, m); d (p, b, a, d); o (o, c, a, q); s (f, g, s, z); k (l, k, f, x); v (v, y, w, u); r (l, m, r, n); h (h, n, u, m) and i (i, l, j, t). One point was allocated for each correct response with a maximum of 20 points possible.

1.3 Situation-dependent print, i.e. the reading of words common to the child's environment (Verwoerd, 2000:7). The participants were requested to identify the stimulus material, depicting common logos, signs and words in their environments. If a participant was unable to identify the stimulus words, the

activity was adapted to see whether the participant was able to recognize the stimulus if the researcher said the name. Incorrect responses were written down. The use of the generic name rather than the specific label by a participant was also accepted as a correct response, since this could be expected initially (e.g. Colgate is toothpaste) (Edmiaston, 1988:31). The participants were requested to identify stimuli representing the following variations of situation-dependent print, based on the Checklist of Literacy Behaviors (Edmiaston, 1988:31): Own name, common logos, generic product names, food product names, traffic signs, toy names or logos, functional labels and names or items of high personal interest (Edmiaston, 1988:31). For the purpose of this study, stimuli representing clothing labels were omitted. A study on appropriate pre-literacy assessment instruments for South African children from lower socio-economic circumstances, residing in urban areas, found that clothing label stimuli were unsuitable for these children due to lack of exposure to these items (Verwoerd, 2000:19). Since the participants of this study were also from lower socio-economic circumstances, it was reasoned that this stimuli would also be inappropriate for this group even though they were from a different cultural group. For the identification task, the participants were asked: "do you know what this is?" If a participant was unable to comply, the activity was altered to assess recognition, so typical instructions were; "Can you show me which one says 'Coke'? ", etc. The stimuli that were utilized were determined by the results of the preliminary study. Three items were presented in each category (Verwoerd, 2000:9-10). The following items were included for each category:

Category:	*Stimuli:*
Own name:	Own name and two foils
Common logos:	Telkom, police and Cell C
Generic product names:	OMO, Zambuk, Kiwi shoe polish
Food products:	Simba, Coke, Pilchards
Traffic signs:	Stop, traffic light, speed limit sign
Toy names/ logos:	Dragonballz, Barney, Sesame street
Functional labels:	Man, hospital/ ambulance and exit

Names/ logos of high personal interest: School names, teacher's name, town name.

Two points per item were allocated if the participant was able to identify the stimulus material and one point was allocated if the participant was only able to recognize the stimulus.

1.4 Productions of written language: The participants were presented with a piece of paper and pen, asked to write something and asked to "read" what was written. The stage of development was then determined by referring to the Stages of Children's Productions of Written Language from the Preschool Literacy Assessment as compiled by Edmiaston (1988:33). A numeric value was allocated to each stage, with 1 representing proto-writing and 10 representing the ability to write narratives and stories. In cases where overlapping between the different stages occurred, the stage most representative of the participant's developmental level was identified.

ii. Narrative abilities:

Narrative abilities were assessed employing a story-retelling task where the child that is not yet reading conventionally is handed a familiar book and asked to "read" the story (Edmiaston, 1988:31-32; Boudreau and Hedberg, 1999:252; Kaderavek and Sulzby, 2000:35). The shared book-reading activity was continued to assess this aspect of early literacy. For the purpose of this study, "a familiar book" referred to any storybook to which children had been exposed in their classroom. The participants were informed that they would be told a story and that upon completion they would be requested to tell the story. The narrative text of the storybook corresponded to each page that was read. The interpreter immediately translated anything that was said by the child and the researcher wrote down the translated responses. The participants' responses were also audiotaped and checked again at a later stage. This was later analyzed according to the Descriptive Checklist of Children's Retelling of Stories (Edmiaston, 1988:32). A numeric value was given to each developmental stage, with the lowest number (one) reflecting the earliest stage of narrative abilities and the highest number (eight) representing independent reading.

iii. Phonological awareness

1. Rhyme or alliteration detection: Three words were presented to the participants with one word that differed on the basis of a common phoneme or rhyme (Justice, *et al.,* 2002:93). The participants were expected to identify the word in the set that was different (Justice, *et al.* 2002:93). Rhyme detection and production are amongst the simplest phonological awareness tasks for kindergarten children and although rhyming tasks are useful as an early indicator of phonological awareness, performance on rhyming tasks have not been found to be as strongly related to later reading achievement as other measures of phonological awareness (Blachman, 1991:61). In addition, rhyme does not seem to form part of the African language and culture, to the same extend as English-speaking cultures (McCord, 2000:42). Thus the alliteration task was selected for this study. The procedure used was based on the procedure utilized by several researchers (Burt, Holm and Dodd, 1999:317; Gilbertson and Bramlett, 1998:111; Larrivee and Catts, 1999:121). Three words were presented to the child, of which two had the same initial sound phoneme. The participant was asked to identify the word that differed from the rest. Introduction to the task was done by directing the participants' attention to the initial sound in their own names. This was done in the following way: "Your name _____ (*child's name)* starts with a ____sound (*sound was produced, not the letter name).* I know other names that start with the ____sound (*sound was produced with three examples).* The practice item was then introduced with the following phrase: "I'm going to say some words to you. Three of the words start with the same sound, but one doesn't. Can you tell me which one is different/ doesn't belong?" Stimulus pictures were provided and the interpreter pointed to each picture while simultaneously naming them. Attention was focused on initial phonemes with the following phrase: "meetse starts with m, mpsha starts with m, monna starts with m. They all start with m, except for katse, that starts with k, so it doesn't belong". The following ten items were presented:
    1. Baba (bitter), Bosasa (tomorrow), Selemo (summer)
    2. Goga (pull), Lesome (ten), Labone (Thursday)
    3. Holo (hall), Bosasa (tomorrow), Hotele (hotel)

4. Moriri (hair), Noto (glue), Molala (neck)
5. Kala (branch), Kutu (stem), Garafo (spade)
6. Namane (calf), Dinawa (beans), Diterebe (grapes)
7. Pula (rain), Pelo (heart), Bora (drill)
8. Rata (love), Motato (wire), Rakgadi (aunt)
9. Tau (lion), Tee (one), Naledi (star)
10. Pere (horse), Sefako (hail), Serapa (garden)

The participant was requested to identify the word that had a different initial phoneme from the other two words. One point was awarded for each correct response with a maximum of ten points possible.

2. Production of word with target phoneme: Participants were requested to name words beginning with specific phonemes. Participants' names were used as examples. The participants were requested to name words with the initial phonemes */s/, /m/, /l/, /k/ and /p/*. One point was awarded for each correct response with a maximum of five points possible.

3. Analysis: The participants were requested to segment a word into its constituent phonemes by requesting participants to break a word into pieces (Justice, *et al.,* 2002:93). This ability is one of the strongest predictors of later word recognition ability (Lombardino, *et al*., 1999:137). Two practice items with pictures preceded the five assessment items. The following stimuli words were used: pese (bus), tee (one), tau (lion), ema (stand) and agee (hello). One point was awarded for each correct response with a maximum of five points possible.

4. Phoneme count: The participants were requested to identify the number of phonemes in a target word by tapping the number or using tokens to represent the phonemes (Justice, *et al*., 2002:93; Lombardino *et al.*, 1999:415). To familiarize a participant with the task, two examples were given of which one was used with a stimulus picture and the other was the participants' name. The following words were used: aka (kiss, fondle, lie), fa (here), katse (cat),

masa (daybreak) and nko (nose). One point was awarded for each correct response with a maximum of five points possible.

Although deletion was also identified as an early literacy target by Justice *et al.* (2002:93), this procedure was omitted from the protocol. For this auditory task, a participant is requested to delete a syllable or a phoneme from a word to produce a new word, for example, by deleting the "b" from "bat" a new word "at" is formed (Catts, Fey, Zhang and Tomblin, 2001:40; Gilbertson and Bramlett, 1998:111). Although it is possible to do deletion with Sepedi, this procedure was omitted due to the following reasons (Taljard, 2004):

- Not enough examples of words that will typically appear in young children's vocabulary could be obtained for the deletion task.
- Although some words are spelled similarly, their meaning is determined by pronunciation and differences in tone. Thus, although it might be possible to create a new word by deleting some sounds or syllables when the word is in written form, the pronunciation of the words might be completely different. The deletion task for this protocol is specifically an auditory task. This implies that the word given to the child and the target word should have the same tone use.

No Sepedi words meeting these criteria could be identified.

iv. Letter name knowledge

Since there are no letter names in Sepedi, English letter names were elicited. This is in accordance with the current practice in Sepedi medium schools, where English letter names are taught in the foundation phase (Mametse, 2004). This section assessed participants' knowledge of letter names only, and not grapheme-phoneme associations, which were assessed in the next section.

1. Knowledge of the alphabet and accuracy in naming letters could be determined by utilizing either expressive or receptive tasks (Justice and Ezell, 2002:21; Justice, *et al*., 2002:93). Although Justice and Ezell (2002:21) utilized both an expressive task and a receptive task, Justice, *et al.* (2002:93) indicated that either method could be used. Since the results of the preliminary study didn't identify a specific task as being more appropriate, the expressive task was selected based on the personal preference of the

researcher. For the expressive task, 10 cards depicting uppercase letters were presented and participants were asked to name each letter as it was presented (Catts, *et al.,* 2002:1147; Justice and Ezell, 2002:21). Cards were chosen to represent the letters in the first names of the participants and the total was made up by randomly selecting other cards (Justice and Ezell, 2002:21). Although either a series of uppercase or lowercase letters can be utilized for these tasks (Justice, *et al*., 2002:93), lowercase letters were used for the purpose of this study. One point was allocated for each correct response with a maximum of ten points possible.

2. The participants were asked to recite the alphabet, as suggested by Justice, *et al.* (2002:93). Only one point was awarded if the subject was able to recite the alphabet in full and in the correct order. No points were awarded if any mistakes were made.
3. Rapid letter naming ability was assessed by presenting cards with all the letters of the alphabet to the participants, who were requested to name the letters as fast as possible (Justice, *et al*., 2002:93). Along with letter name knowledge, the speed with which a child is able to identify letters accurately is significant in predicting later reading skills (Lombardino, Morris, Mercado, DeFillipo, Sarisky and Montgomery, 1999:139). Research indicates that among children experiencing reading disability, those who perform poorly on these tasks may be most at risk for persistent failure in acquiring reading skills (ASHA, 2000:277-278). To ensure that the task measures rapid letter naming ability and not the ability to recite the alphabet, the sequence of the letters was changed so that it was different from the alphabetical order. The letters was presented in the following order: b, n, x, f, q, j, r, o, g, w, e, y, k, s, c, u, h, z, p, t, l, m, a, v, i, d. Wrong responses were written down. When participants were unable to perform the expressive letter knowledge task and were unable to identify five consecutive letters for the rapid letter naming task, the activity was ceased. This was done so that the participants did not experience any discomfort, either physical discomfort such as fatigue or emotional discomfort from being unable to perform a task. One point was allocated to each correct response with a maximum of 26 points possible.

v. Grapheme-phoneme correspondence:

For this task, alphabet letters were shown to participants, who were asked to produce the sound that goes with the letter (Gillon, 2000:129; Justice, *et al*., 2002:93). In order to familiarize the participants with the task, two examples were given with the help of two letter cards. These cards depicted two letters as well as pictures of words in which the phonemes represented by these letters occur. The letters K and A were used as examples, with pictures of a cat (the Sepedi word is "katse") and an apple (the Sepedi word is "apola"). The letters' alphabet name was called, while pointing at the letter. The interpreter/ examiner then proceeded by drawing the participant's attention to the sound that is represented by the specific letter, as the sound is found in a word. The following instructions were given: "This is K (use alphabet name). This letter makes the [k] (produce sound) sound that we hear in "katse". This is the A (use alphabet name). A stands for [a] (produce sound) that we hear in "apola". Let's see if you can tell me what sound this letter stands for… " The following letters were presented: s, l, p, m, t, o, f, i, r, b. One point was awarded for each correct response with a maximum of ten points possible.

vi. Literacy motivation:

1. Two pictures of literary events, i.e. one picture of a child writing and one picture of a child reading, were shown to the participants. The participants were requested to indicate whether the children on the pictures were happy or sad by pointing to a smiling face or a frowning face (Justice, *et al.,* 2002:93). The emotions associated with the frowning and smiling face was discussed first. One point was awarded when the child indicated happy, no points were awarded if the child indicated unhappy.
2. The participants were observed while busy with a variety of literacy tasks and their level of engagement were described on a continuum from no/ low engagement to high engagement level (Justice, *et al*., 2002:93). This was observed during the assessment procedure and was verified by the educator. A numeric value was given to each level with low engagement scoring one point and high engagement scoring 5 points.

2.7.4 Data recording procedures

The recording of the data was done as follows:
The criteria information of each subject was recorded on a record form (Appendix D). Information obtained during the assessment procedures was recorded on the protocol form. The data from these two forms was then recorded in Microsoft Excel in order to process the results for statistical analysis.

2.7.5 Data analysis procedures

Using SAS version 8.2, the data was organized so that frequencies, means and percentages were obtained. In order to compare the performance of boys and girls across the different areas assessed, the distribution free Mann-Whitney test was utilized (Leedy and Ormrod, 2005:274). The Kruskal-Wallis test (Leedy and Ormrod, 2005:274) was utilized so as to compare the performance of the subjects with their academic performance, their mother's education level and their level of literacy engagement. Microsoft Excel was used to present data graphically.

2.8. Reliability and validity:

Reliability refers to the precision with which a sample is taken and whether the measurement is repeatable at another time (Owens, 1995). In order to ensure reliability, the researcher and the trained assistant, who also served as the interpreter, did all the assessments. An independent trained observer observed 5 assessments. If one of the three parties disagreed about any of the results, this aspect was discussed until full agreement was reached (Fair, 2001).

Validity refers to the effectiveness of a procedure to measure the phenomena it claims to measure (Leedy, 1997). The procedures utilized in this study were completely based on the procedures as used by several other researchers and the procedures were mostly used as described by these researchers. Some adaptations have been made so that the procedures were also appropriate for the context in which the research was taking place. The validity of the study is thus based on the validity of the measurements as they have been proven in literature.

3. Results and discussion:

The results are presented graphically and discussed with reference to the aim and objectives of this study. The responses of the subjects were scored and the scores converted into *percentage correct* scores for each separate category. Where appropriate for a specific category, an item analysis is also provided. With consideration to the exploratory nature and descriptive design of the study, as well as the small sample size, every category will be discussed individually.

3.1 Description of the early literacy development of the participants based on the results of the compiled protocol

The measures included reflect the participants' level of development with regard to the reading and writing behaviours and notions normally attained by children during the pre-school years.

3.1.1 Written language awareness:

Written language awareness includes knowledge of print and book reading conventions, discrimination of written representations of different language units, situation-dependent print and productions of written language.

Knowledge of print and book reading conventions:

Twelve skills are subsumed under this heading, all relating to the knowledge a child has acquired with regard to handling a book (i.e. whether the book is held right side up, pages are turned one at time, pages are turned from the front to the back and whether the child's finger runs from left to right when the child is asked to point to words that were read by an adult) and to the child's knowledge of specific features (i.e. the front of the book, beginning of a sentence, longest word, the space between words, the words that are read, the top, the bottom and the name of the book/ story).

Figure 1 provides a graphical representation of the subjects' performance on print and book reading conventions as a percentage of the maximum points that can be obtained.

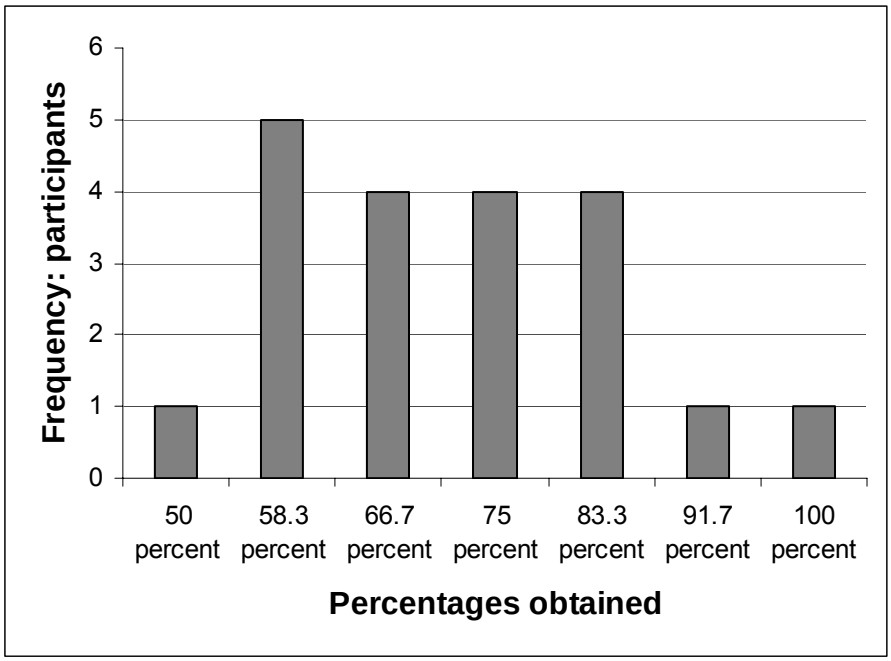

Figure 1: Percentage performance of participants on print and book reading conventions

A group mean of 8.6 (71.6%) was attained (standard deviation: 3.2) for all tasks, with the participants' performance ranging from 6 (50%) to 12 (100%). The distribution of the participants' performance represents a normal distribution curve to some extent, with 17 of the participants obtaining scores between 58.3% and 83.3%. However, the small sample size makes the application to the larger population disputable.

An overview of the participants' performance on specific print and book reading convention items is provided in Figure 2. Each bar represents the percentage of the participants who exhibited the appropriate form of behaviour for every item. I.e. the participants' original responses were scored with regard to each item utilized to assess their knowledge of print and book reading conventions and converted to percentages.

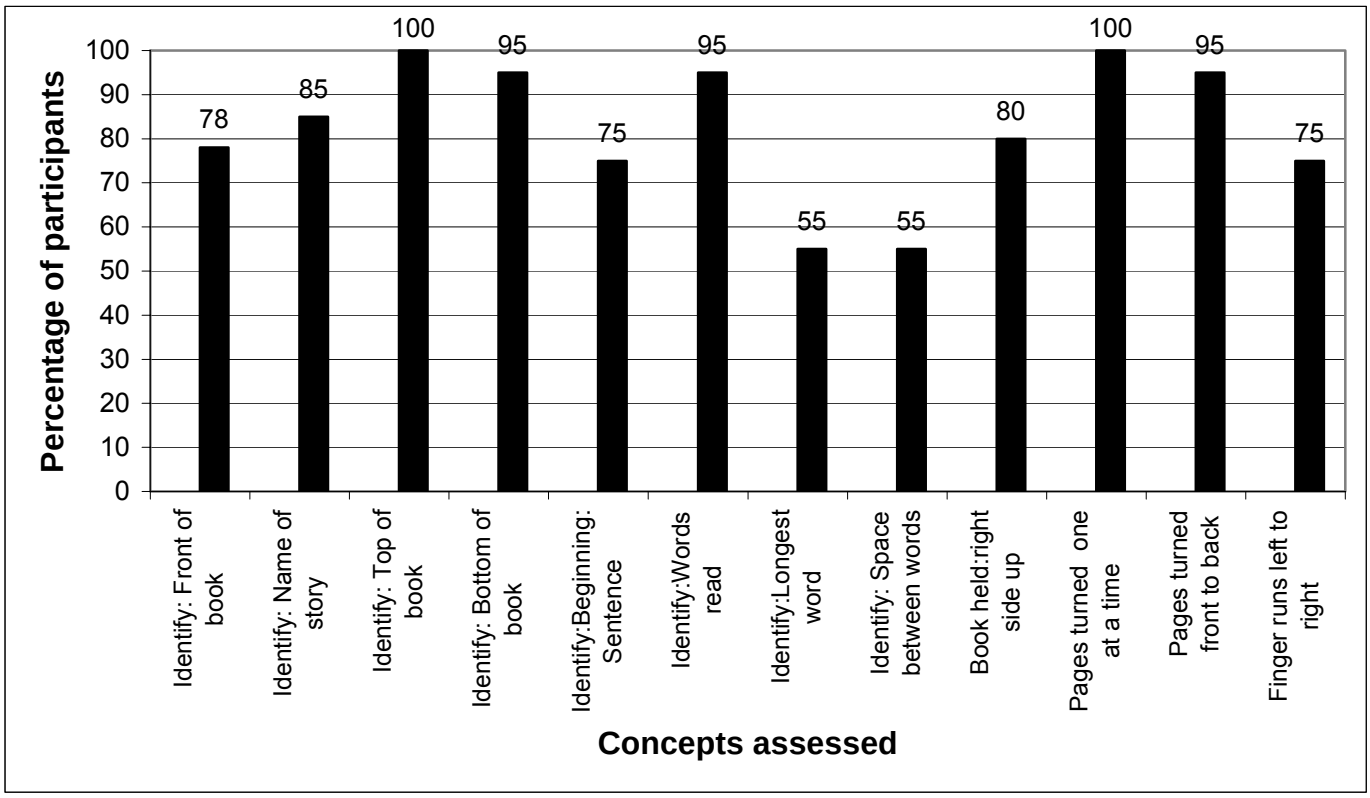

Figure 2: Participants' performance on print and book reading conventions: item analysis

As can be seen in figure 2, more than 80% of the participants held the book right side up, turned pages front to back, turned pages one at a time and were able to identify the name of the story, the top and bottom of the book as well as the words that were read. Between 75% and 78% of the participants were able to identify the front of the book and the beginning of a sentence and ran their fingers from left to right during the reading activity. Just more than half (55%) of the participants were able to identify the space between words as well as the longest word.

Although all of the participants have been exposed to books in their educational setting, the performance of these participants appears to be poorer than the performance of a group of inner-city children from another urban area in the same metropolitan city. In a study measuring emergent literacy skills of a group of South African children in an urban setting, all the participants obtained a percentage score above 80% (Verwoerd, 2000:24). The items used to measure print and book reading

conventions differed slightly between the two studies. The present study omitted the concepts of "letter" and "sentence" which were included in the other study, but included the identification of the beginning of a sentence, the longest word and the space between words, which were not included in the study by Verwoerd (2000:11). Based on these results, it seems that the two groups from the two studies compare relatively well with each other with regard to their book handling skills. The difference between the two groups with regard to their knowledge of specific features might be attributed to the different task items utilized in the two studies. Where task items between the studies correlated, but the performance of the two groups varied, the difference in performance could possibly be attributed to cultural, socio-economical and educational factors.

In another South African study, early literacy skills of black children attending farm nursery schools were assessed during the 18th week of a 23-week early literacy programme (Winer, 1992:143). In the Winer 1992 study, 62.9% of the participants held books the right side up and only 33.3% of the participants were able to identify the beginning of the story (Winer, 1992:143). In the present study, 80% of the participants held books right side up and 75% of the participants were able to identify the beginning of the story. Again it seems that there is a greater similarity in the book handling skills of different South African population groups than there is in their knowledge of specific features. The participants from the Winer study (1992:143) obtained lower scores on the feature items. One possible conclusion that can be drawn is that children attending farm nursery schools are likely to exhibit poorer knowledge of print and book reading conventions. However, this would be a crude assumption without consideration of other possible contributory factors such as cultural, socio-economical and educational factors. Finally, the study by Winer was conducted in 1992 and it is possible that the factors influencing the print and book reading conventions knowledge of children attending farm nursery schools have changed.

In table 5, the performance of the participants of the present study is compared to the performance of the participants of a study on the written language awareness of pre-school children from low-income households conducted in the USA.

Table 5: The performance of the present study's participants on written language awareness tasks, as compared to the performance of pre-school children from low-income households conducted in the USA

Aspect assessed:	*Presents study*	*USA study* (Justice and Ezell, 2001:128)
Identifying the front of the book:	75%	76.3%
Awareness of the left to right directionality of pages:	95%	65.8%
Awareness of the directionality of print	75%	36.8%

Although the rest of the procedures utilized by Justice and Ezell (2001:128) to assess performance on print concepts are different from those used in the present study, the variation in the performance between the different groups underscores the necessity of culturally sensitive procedures for identifying delays in the early literacy development of children.

Discrimination and orientation of written representations of different written language units.

The discrimination and orientation of written representations of different language units were assessed with two tasks. The first task assessed the discrimination of literacy terms while the second task assessed letter orientation and discrimination.

Discrimination of literacy terms:

This task assessed the identification of the following ten literacy terms depicted on cards with three alternatives: word, letter, number, sentence, reading, writing, capital letter, lower case letter, question mark and print.

Figure 3 provides a graphical representation of the subjects' performance on the discrimination of literacy terms as a percentage of the maximum points that could be obtained.

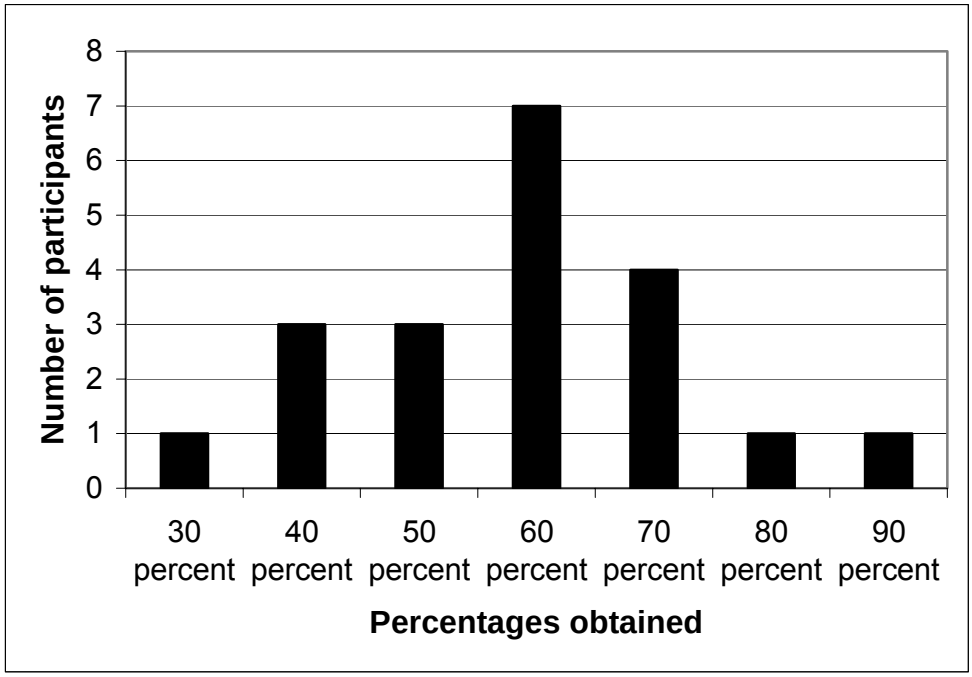

Figure 3: Percentage performance of participants on the discrimination of literacy terms

A group average of 5.85 (58.5%, standard deviation 1.5) was obtained with the participants' performance varying from 30% to 90%. The distribution of the participants' performance represents a normal distribution curve to some extent, with a peak at 60%, but the small sample size makes the application to the larger population problematic.

Figure 4 represents an item analysis of the participants' performance on the discrimination of literacy terms.

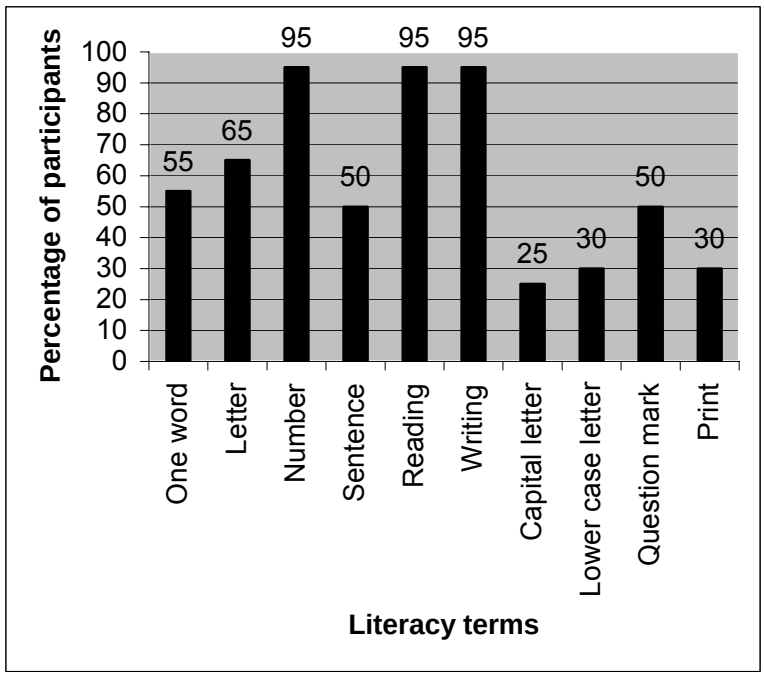

Figure 4: Item analysis of participant's performance on the discrimination of literacy terms

As can be seen from figure 4, the majority of the participants (95%) were able to identify "number", "reading" and "writing" correctly. Between 50% and 65% of the participants were able to identify "one word", "letter", "sentence" and "question mark". Only 30% and less of the participants were able to identify "capital letter", "lower case letter" and "print".

In a study to assess the early literacy skills of Zulu children attending farm nursery schools, Winer (1992:142) found that 14.7% of the participants were able to identify a letter, while 60.7% of the participants could identify a sentence. In the present study, more participants (65%) were able to identify a letter, although only 50% of the participants were able to identify a sentence. The difference in the performance of the participants of these two studies on these specific items suggests that the participants' knowledge of these terms might be attributed to the curriculum followed at school, since it is unlikely that this difference in performance can be attributed to other socio-economic or cultural factors.

The participants in the present study also performed better on all items of this task than the participants of a similar study conducted in the USA (Justice and Ezell,

2001:130). In the USA study, the discrimination of literacy terms task was employed to assess pre-schoolers from low-income households written language awareness (Justice and Ezell, 2001:130).

At this stage the results of the present study suggests that the participants of the present study performed better on these tasks than the participants of the other two related studies. The difference in performance between the various participant groups of the studies discussed cannot be attributed only to procedural differences since there was some correspondence in the procedures utilized. The difference in performance between the various participant groups can probably be attributed to numerous factors, including the school curriculum, socio-economic factors and cultural influences (Waugh, 2003:27; Blachman, 1991:62; Winer, 1992:13).

The variance in the performance of the different participant groups of the different studies again accentuates the exigency of using culturally sensitive tasks and criteria when the early literacy skills and knowledge of different groups are assessed.

Letter orientation and discrimination:

Letter orientation and discrimination refer to the knowledge of and aptitude to attend to the visual features of graphemes.

Figure 5 provides a graphical representation of the participants' performance on the letter orientation task, letter discrimination task and the total performance on the two tasks as a percentage of the of the maximum points that could be obtained.

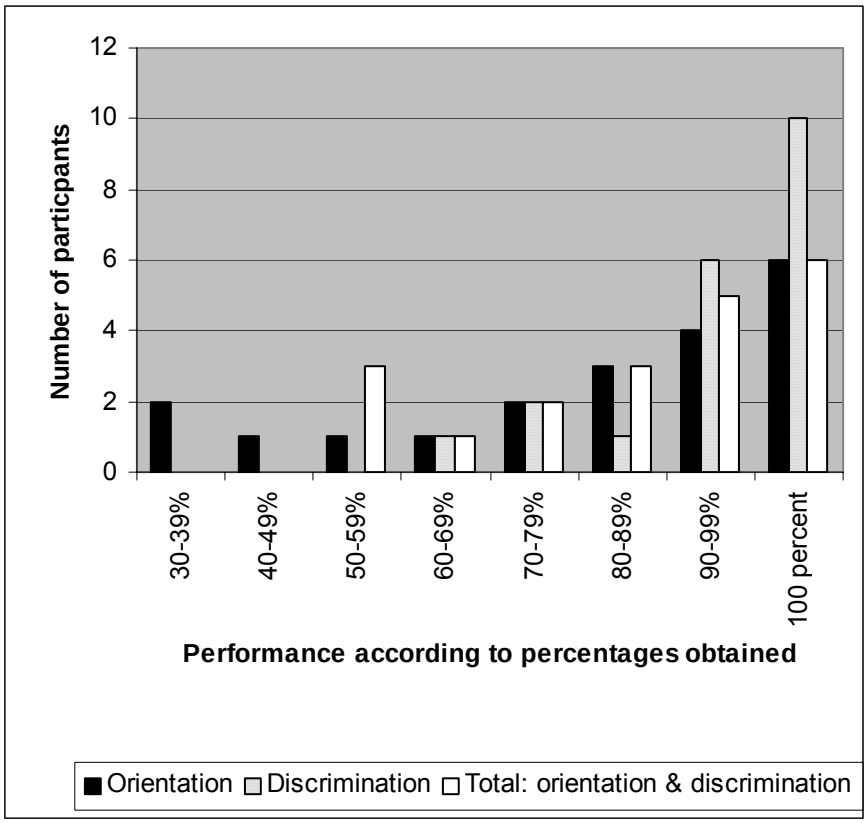

Figure 5: Percentage performance of participants on the letter orientation task, letter discrimination task and the total performance on both tasks

On average, participants scored higher on the letter discrimination task with a 91% average than on the letter orientation task with a 77.5% average. Performance on letter orientation varied between 30% and 100%, while letter discrimination ranged from 60% to 100%. The total performance on these tasks (i.e. the performance on letter orientation plus the performance on letter discrimination) ranged between 50% and 100%, with an average of 84.3%(standard deviation: 3.4 for the total score out of 20). The superior performance of the participants on the discrimination tasks has also been observed by Justice and Ezell (2001:129). In their study, averages of 6.5 for 10 orientation tasks (65%) and 7.4 for 10 discrimination tasks (74%) were obtained. Furthermore, in concurrence with the study by Justice and Ezell (2001: 129), participants' performance on these tasks in the present study was the highest for all procedures used to assess written language awareness. If the lowest scores obtained for these tasks in both the present and Justice and Ezell (2000:129) study are used as a guideline, it seems reasonable to state that as a general guideline, typical pre-school children should be able to discriminate at least 65% of different

letter orientations and be able to discriminate at least 74% of letters when presented with other similar looking letters.

Situation-dependent print:

This refers to the child's ability to recognize ("read") words commonly found in the child's environment (Verwoerd, 2000:7).

Figure 6 depicts the participants' average performance on all situation-dependent print tasks as a percentage of the maximum points that could be obtained. For clarification, participants are grouped in percentage increments according to the specific percentages that were obtained.

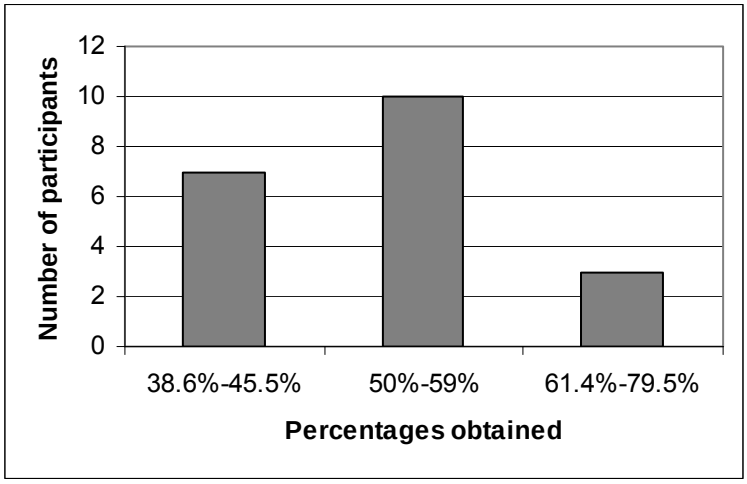

Figure 6: Participants' average performance in percentage on all the situation-dependent print tasks

An average of 51.3% was obtained, with participants' performance ranging from 38.6% to 79.5%. The distribution of the participants' performance represents a normal distribution curve to some extent, with the majority of the participants obtaining scores between 50% and 59%. However, the small sample size makes the application to the larger population problematic.

Figure 7 provides a summarized graphical representation of the subjects' mean performance in identifying or recognizing specific categories of situation-dependent print, as a percentage of the maximum points that could be obtained. The

participants were first requested to identify the stimuli. If a participant was unable to identify the stimuli, the activity was adapted to determine whether the participant was able to recognize the stimuli. For the recognition task, the participant was requested to point out a specific stimulus item that was presented with other stimuli items. For example, if the participant was unable to identify the stimuli item "Coke", the item was presented with other items such as "Pilchards" and "Simba" and the participant was requested to indicate which one was "Coke". This task was only administered if a participant was unable to identify the stimuli. The use of generic names, for example when a participant says "toothpaste" in stead of "Colgate", was also accepted as correct responses, as this could be expected (Edmiaston, 1988:31).

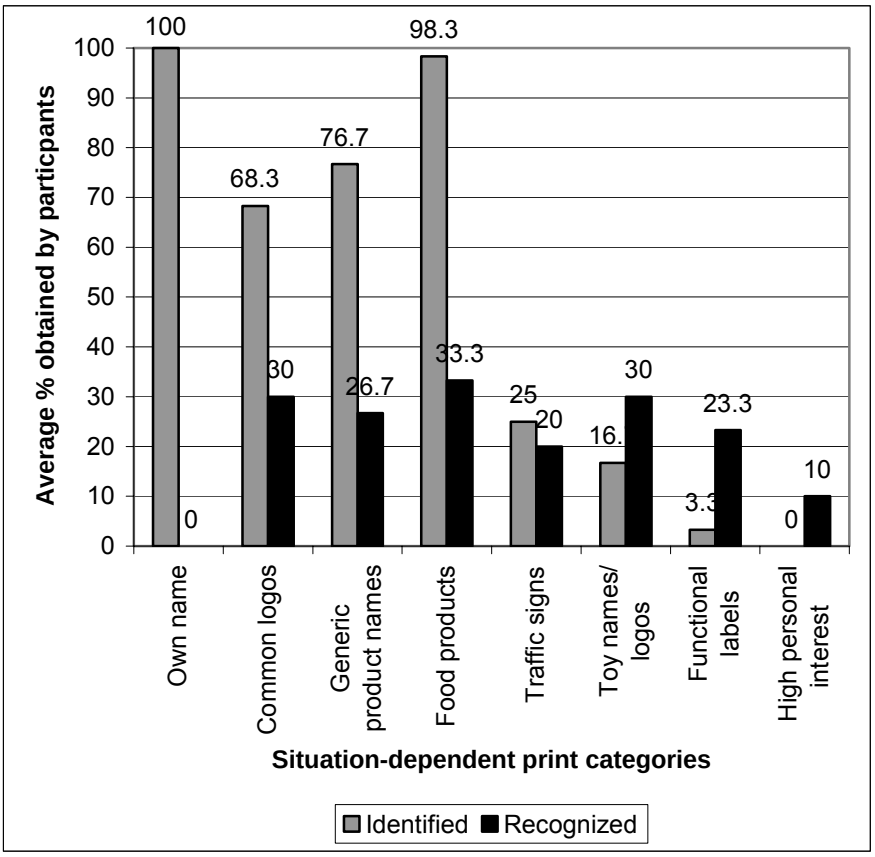

Figure 7: Summary of participants' mean percentage performance on identifying and recognizing different situation-dependent print stimuli

All participants were able to identify their first names. No participants could identify any names of high personal interest (e.g. the educator's name, school name). Food products, generic products and common logos were the most identified categories,

with obtained percentages of 98.3%, 76.7% and 68.3% respectively. For toy names and logos, functional labels and names and logos of high personal interest, more participants were able to recognize the stimuli than were able to identify them. For these categories, percentages of 30%, 23.3% and 10% respectively were obtained for recognition as compared to the lower percentages of less than 25% for the identification task. It should be noted that the recognition task allows for guessing, as a participant had to choose an option, which might be a factor in the higher scores obtained.

In comparing this study to another study investigating the pre-literacy skills of pre-school children in an urban South African context (Verwoerd, 2000:20), some similarities can be observed. In both studies, all participants (100%) were able to identify their own names. Very low percentages for the identification of names of high personal interest were obtained for both studies, viz. 32% for the earlier study (Verwoerd, 2000:20) and 10% for the current study. Furthermore, both studies obtained the highest percentages for generic product names (88% and 76.7% respectively) and food product names (89% and 91.7% respectively) (Verwoerd, 2000:20), although there is some difference in the exact percentages obtained by the two groups. Only 58% of participants in the study by Verwoerd (2000:20) were able to identify common logos, slightly lower than the percentage obtained for identifying common logos (68.3%) in the present study. The participants of the present study also obtained lower mean percentages of 25%, 16.7% and 3.3% respectively, for traffic signs, toy names/ logos and functional logos as compared to the higher percentages of 77%, 89.5% and 82% obtained by the participants of the Verwoerd study (Verwoerd, 2000:20).

Children's exposure to situation-dependent print greatly influences their ability to recognize the printed words and symbols (Verwoerd, 2000:20). Furthermore, children from lower socio-economic circumstances have been shown to perform more poorly on these tasks as compared to their peers from middle class (Justice & Ezell, 2001:130). It can be hypothesized that the participants in the present study might have less exposure or less consistent exposure to these items, because people from lower socio-economic circumstances might not necessarily give preference to a specific brand, but might rather be influenced by affordability.

Based on these results, it appears that typical participants of the present study exhibit greater awareness of their own names, common logos, generic product and food product situation-dependent print. The low scores obtained for both identifying and recognizing traffic signs, toy names/logos, functional labels and names of high personal interest, might be seen as a reflection of poorer awareness of these categories, possibly because of lack of exposure or lack of attached meaning or attentiveness to the stimuli. Thus, these categories might not be suitable in identifying possible delays in the development of situation-dependent print awareness.

For further clarification, an item analysis of participants' performance regarding the identification of different situation-dependent print categories and stimuli is also presented.

Figure 8 provides a graphical representation of the percentage of participants that were able to identify and recognize specific stimuli items for each category assessed.

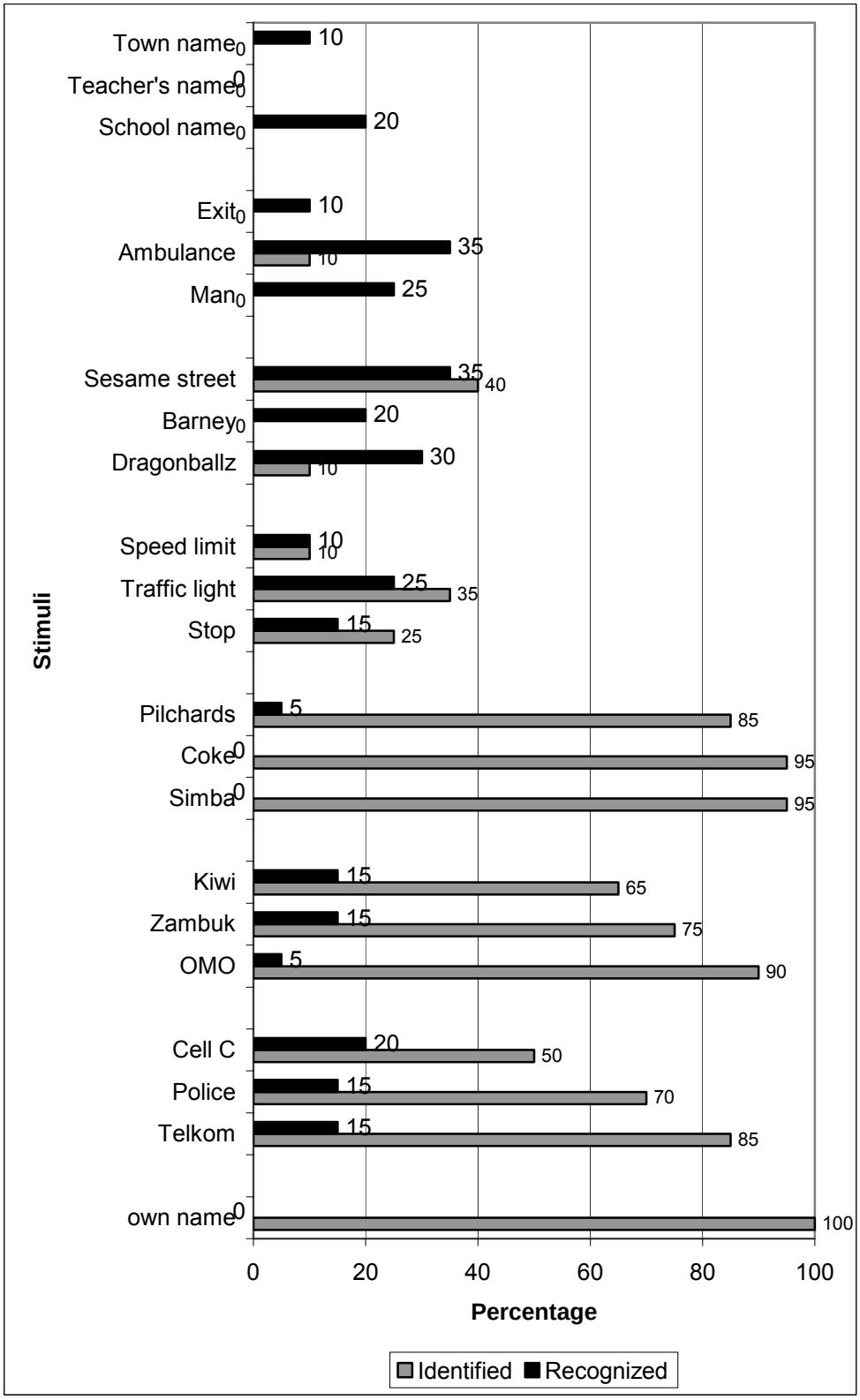

Figure 8: Item analysis of participants' performance on the identification and recognition of situation-dependent print stimuli

Except for each participant's own name, the stimuli “Coke” and “Simba” were the most identified stimuli, with 95% of the participants able to identify them. More than 75% of the participants were able to identify “OMO” “Telkom”, “Pilchards”, “Zambuk” and “Police”. Slightly fewer participants (65%) were able to identify “Kiwi” and only half of the participants could identify “Cell C”. The participants thus seemed to be most familiar with stimuli in the common logos, generic products and food products categories. Although there is some variance in percentages, the participants in the study by Verwoerd (2000:22) also obtained high percentages of 75% or more for identifying food and generic product items. As discussed earlier, the performance of the two groups of participants in the two studies varied significantly for the other categories.

Finally, the stimulus items utilized to assess common logos, generic product names and food products can be seen as appropriate stimuli for the assessment of situation-dependent print awareness. The use of traffic signs, toy names and logos, functional labels and high personal interest stimuli items as assessment stimuli seems questionable for this specific group, as only a low percentage of participants were able to identify or recognize the stimulus items from these categories.

Productions of written language

Each participant’s developmental stage for written language production was determined by referring to the Stages of Children’s Productions of Written Language from the Preschool Literacy Assessment (Edmiaston, 1988:33). In order to analyze and present the results graphically, a numeric value was allocated to each stage, with 1 representing proto-writing and 10 representing the ability to write narratives and stories. In cases where overlapping between the different stages occurred, the stage most representative of the participant’s developmental level was identified by analyzing the written language production sample.

Figure 9 provides a graphical representation of the percentage of participants at each developmental stage of written language production.

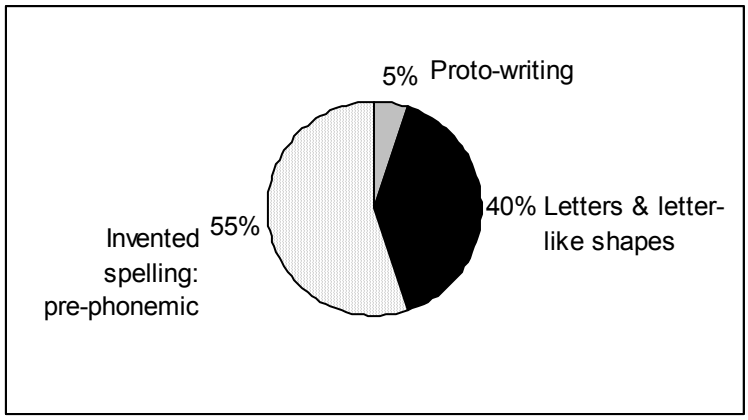

Figure 9: The distribution of participants according to their developmental stage of written language productions

All the participants are distributed among the first three stages of written language production development. The majority of the participants (55%) displayed pre-phonemic invented spelling, while 40% of the participants produced written language consisting of basic letter and letter-like shapes. Only 5% of the participants (i.e. one participant) still exhibited proto-writing.

These results differ from those found in the study by Verwoerd (2000:28). In the Verwoerd study (2000:28), participants' level of written language production varied. The majority of the participants (58%) exhibited pre-phonemic invented spelling (Verwoerd, 2000:27). 37% of those participants produced letter and letter-like shapes. One participant (5%) exhibited transitional invented spelling that could be read by others (Verwoerd, 2000:28).

Based on the results of the Verwoerd (2000) study as well as the present study regarding the productions of written language, it seems that despite other differences, the majority of pre-school learners in this geographical area will demonstrate pre-phonemic, invented spelling.

3.1.2 Narrative abilities:

The participants' narrative abilities were measured by analyzing their retelling of a familiar book according to the Descriptive Checklist of Children's Retelling of Stories (Edmiaston, 1988:32). For purposes of analysis, a numeric value was given to each

developmental stage, with the lowest number (one) reflecting the earliest stage of narrative abilities and the highest number (eight) representing independent reading.

Figure 10 provides a graphical representation of the percentage of participants at each developmental stage as measured according to the Descriptive Checklist of Children's Retelling of Stories (Edmiaston, 1988:32).

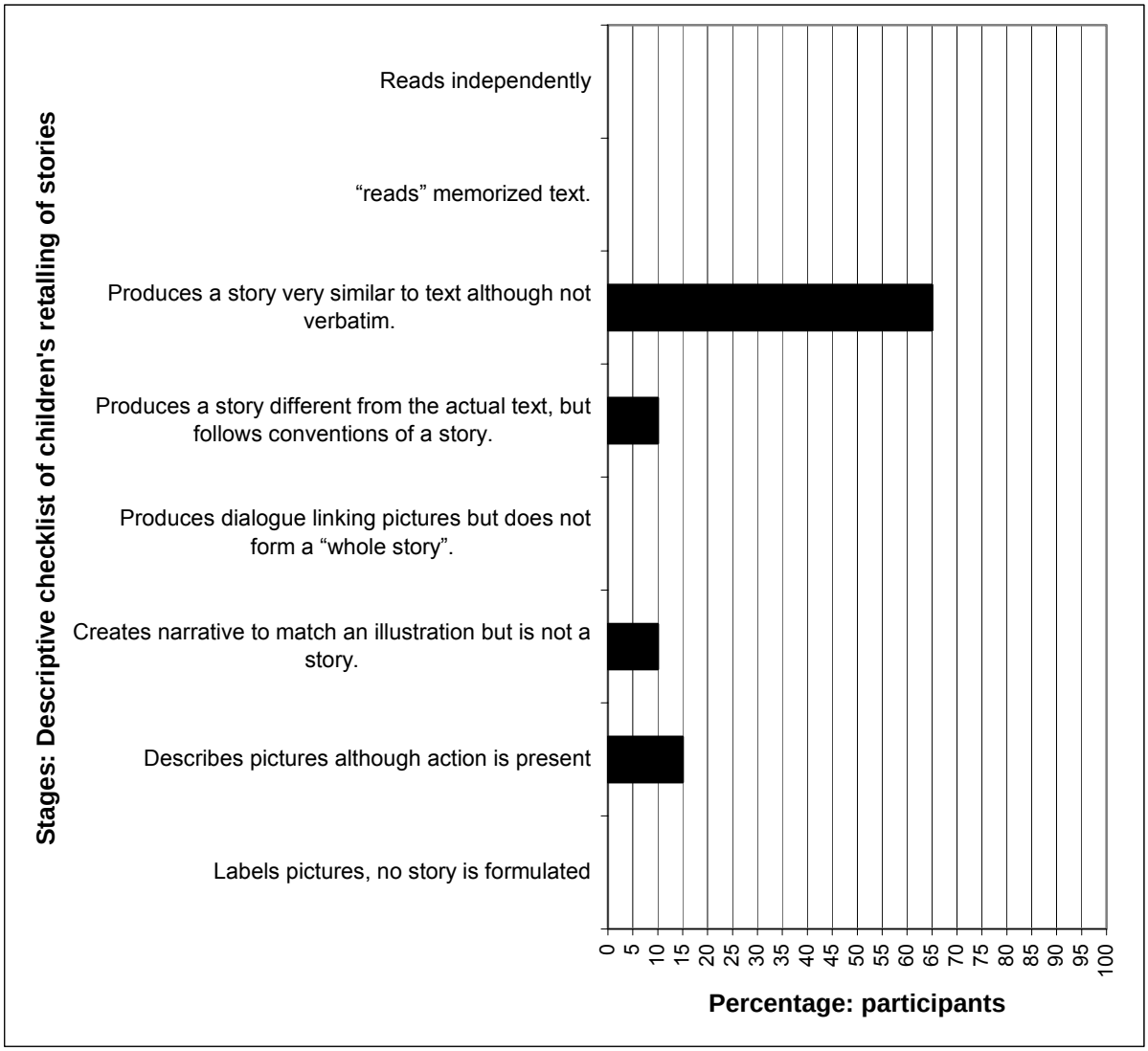

Figure 10: The percentage distribution of participants according to their developmental stage according to the Descriptive Checklist of Children's Retelling of Stories

The majority of the participants (65%) produced a story akin to the original text, although not word for word. None of the participants were able to "read" memorized text. Ten percent of the participants produced a story that followed the conventions

of a story, but that was different in content. Another ten percent of the group of participants produced descriptions that corresponded with the pictures, with no story conventions. Finally, 15% of the participants exhibited very basic story retelling by only describing pictures with action.

Based on these results, it seems that the majority of pre-school children of the target population should be able to produce a story similar to the original text of the story, although not verbatim. The majority of the participants seem to have mastered the knowledge of basic story structure, a skill usually acquired by five years (Roth and Baden, 2001:168).

The results of other studies indicate that the curriculum of a specific school might have a significant influence on the performance of participants when measured according to the Descriptive Checklist of Children's Retelling of Stories (Edmiaston, 1988:32). Results from previous studies showed that participants from schools where story reading formed part of the usual routine, exhibited more advanced story reading and retelling development than those participants from schools where story reading was a sporadic activity with less repetition of stories (Verwoerd, 2000:32). In the study by Verwoerd (2000:32), only 11% of participants produced stories similar to the original text, with the majority of the participants either producing dialogue relating to pictures (37%) or producing narratives that matched the illustrations, although not a story (26%) (Verwoerd, 2000:32). The difference in performance between the participants of the Verwoerd (2000) study and the present study could probably be attributed to the different curriculum and practices of the different schools of the participants. For the purpose of this study, "a familiar book" referred to any storybook to which children have been exposed in their classroom. The storybook used in the present study was a book to which all the participants have been exposed in their classroom. The storybook formed part of the curriculum theme and story reading and retelling was a daily occurrence in the classroom.

These results seem to confirm the notion that children exhibit more advanced development of retelling of stories with increased exposure to story reading and retelling. In addition, due to the influence of a school's curriculum and practices as well as home literacy traditions on the development of story retelling abilities, any

assessment of these skills of children should consider the curriculum and school environment to which a child has been exposed.

Finally, in accord with the findings of Boudreau and Hedberg (1999:255), the participants' performance on the narrative task, was not predictive of their performance on other measures, such as phonological awareness.

3.1.3. Phonological awareness

Phonological awareness can be defined as the explicit awareness of the sounds of spoken language as separate from the meaning (Kay-Raining Bird, Cleave, and McConnell, 2000:320). Phonological awareness was measured with the following tasks: alliteration detection, production of a word with a target phoneme, analysis of words into the constituent phonemes and phoneme count.

Figure 11 provides a graphical representation of the group averages obtained by the participants for all the phonological awareness tasks. In order to compare the results of the present study with the results of other studies, scores were converted to percentages.

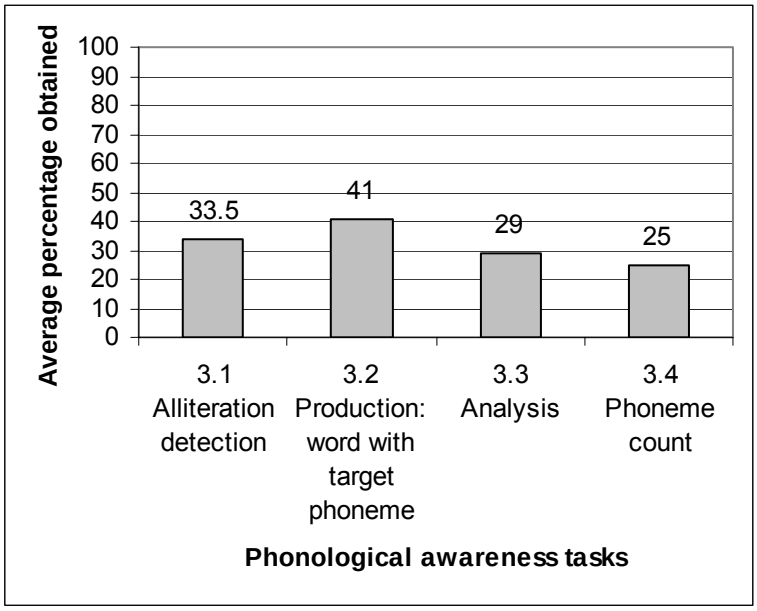

Figure 11: Summary of the participants' performance according to average on the different phonological awareness tasks.

The tasks utilized in this study were those regarded as appropriate for children of this age by Justice, Invernizzi and Meier (2002:88-90). If the measures for determining the appropriateness of tasks utilized by other authors for mastery of a skill are applied, for example 75% (Verwoerd, 2000:19) and 85% (Justice and Ezell, 2001:132), none of the tasks utilized to assess phonological awareness were applicable for the target population. This discrepancy between the tasks suggested in literature on the one hand and appropriate tasks for this specific target population on the other, might be explained in the light of the following considerations:

Firstly, all the tasks employed assessed phonological awareness at phonemic level. Phonemic awareness, i.e. the specific knowledge of and sensitivity to phoneme-size speech units, requires direct instruction and is usually only observed in children in grade one when children are introduced to the alphabet and reading instruction (ASHA, 2000:364; Major and Bernhardt, 1998:415; Rivers and Lombardino, 1998:370, Burt, Holm and Dodd, 1999:313; McFadden, 1998:5). Based on the reciprocal relationship between early literacy skills and phonological awareness, it has been suggested that later literacy instruction influences the attainment of more advanced phonological awareness skills (Major and Bernhardt, 1998:413; Lance, Swanson, and Peterson, 1997:1007). Thus, although other aspects of phonological awareness could probably be assessed at a pre-school level, assessment of phonemic awareness with tasks such as counting phonemes and segmenting words into phonemes, is more appropriate after a child has started formal schooling (Blachman, 1991:62).

Secondly, children in the USA commence formal schooling at an earlier age and since phonemic awareness is attained through instruction, children in the USA are able to perform these tasks at earlier stages (Waugh, 2003:27).

The results of the present study suggest that measures assessing phonemic awareness should consider both age and educational experience in order to interpret findings, rather that just age (Justice, *et al.,* 2002:95). Furthermore, it can be hypothesized that participants would have performed better on tasks assessing awareness of syllables and rhymes, which are more appropriate measures for pre-school children and precede the development of phonemic awareness (ASHA, 2000:363, Burt, Holm and Dodd, 1999:313).

For further clarification, each phonological awareness task is discussed individually.

Alliteration detection:

Alliteration detection assessed participants' ability to perceive similarities and differences between words based on a common initial phoneme.

Figure 12 provides a graphical representation of the participants' performance on the alliteration detection task as a percentage of the maximum points that could be obtained.

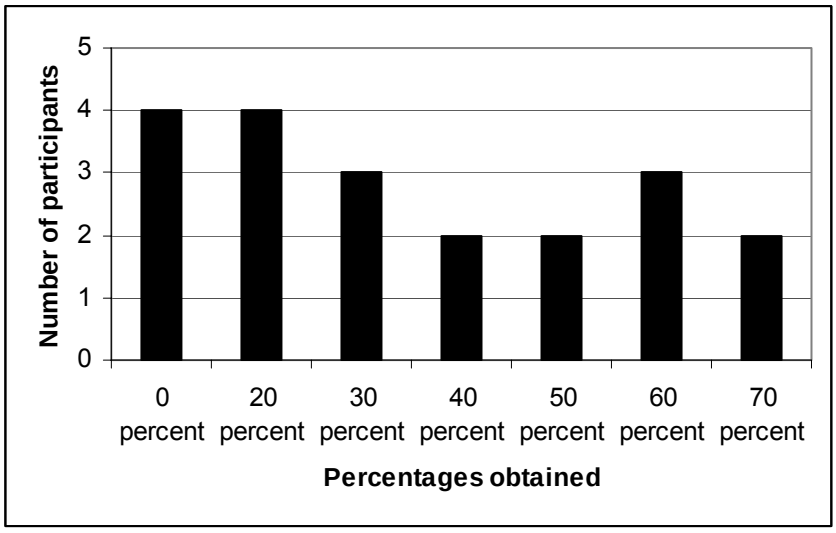

Figure 12: Participants' performance according to percentage on the alliteration detection task

A group average of 33.5% (standard deviation of 2.4 on the raw score out of 10) was obtained, with the participants' performance ranging from 0% to 70%. As can be seen from figure 12 the majority of the participants obtained a score of 20% or less and the graph configuration does not show any resemblance to a typical normal distribution curve.

An alliteration or rhyme detection task was suggested as part of an Early Literacy Screening Protocol (Justice, *et al.,* 2002:93) and is usually seen as appropriate for kindergarten children (ASHA, 2000:364). However, the participants' performance on this task was poorer than expected. One possible explanation is that the participants have not been exposed to such tasks previously. Another possibility is that although

the task was meant to assess alliteration detection, the nature of the task required good auditory sequential memory skills as well. Subjective observation suggests that many of the participants required repetition in order to remember the different words. This reliance on auditory memory might be circumvented with the use of three pictures instead of just words, which will increase the validity of the measure. Several researchers have used pictures in order to assess alliteration detection or rhyme identification (Van Kleeck, Gillam and McFadden, 1998:67; Larrivee and Catts, 1999:121). In addition, according to the hierarchy of task difficulty, phonological awareness tasks with pictures usually precede tasks without pictures (Roth and Baden, 2001:165).

In summary, although an alliteration detection task should be included when phonological awareness is assessed, this task as it was employed in the present study was not found to be appropriate for the specific target population. However, it is possible that the task will become more appropriate if the task is adapted, as discussed in the preceding paragraph.

Production of a word with a target phoneme:

This task assessed participants' ability to produce a word beginning with a specific phoneme (Justice, *et al.,* 2002:93).

Figure 13 provides a graphical representation of the participants' performance on the alliteration detection task as a percentage of the maximum points that could be obtained.

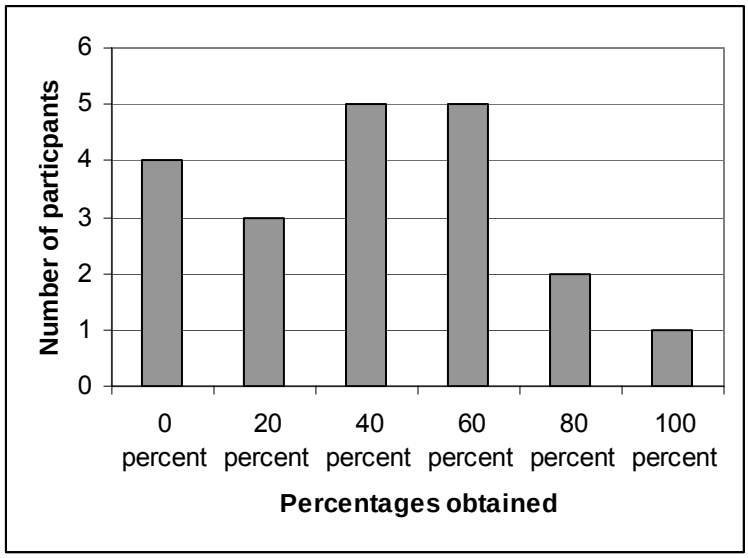

Figure 13: Participants' performance according to percentage on the production of words with a target phoneme

A group average of 41% (standard deviation of 1.5 on the raw score out of 5) was obtained, with the participants' performance ranging from 0% to 100%. The distribution of the participants' performance represents a normal distribution curve to some extent, with half of the participants obtaining scores of 40% and 60%. However, four of the participants (20% of the participants) were unable to produce any words.

This task was also suggested as part of an Early Literacy Screening Protocol (Justice, *et al.,* 2002:93) and is usually seen as appropriate for kindergarten children (ASHA, 2000:364). Nevertheless, participants also performed poorer on this task than expected. This might be attributed to the participants' unfamiliarity with such tasks, as they have not been exposed to such tasks previously. Participants might have performed better if they were familiarized more with the task. Alternatively, it can be speculated that some of the participants' phonological awareness has not yet developed to the more sophisticated phonemic awareness level necessary for this task. This task seems more appropriate for children already at a phonemic level of phonological awareness. .

Analysis of words into the constituent phonemes:

Analysis refers to the ability to segment a word into its constituent phonemes, an ability that is viewed as one of the strongest predictors of later reading achievement (Lombardino, *et al*., 1999:137).

Figure 14 provides a graphical representation of the participants' performance on the analysis task as a percentage of the maximum possible correct items.

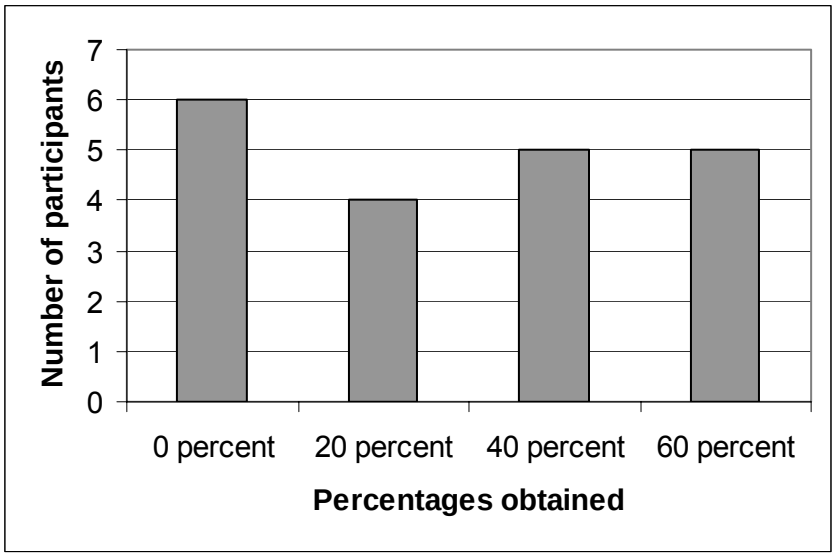

Figure 14: Participants' performance according to percentage on the analysis task

As can be seen from figure 14, a group average of 29% (standard deviation: 1.2 for the raw score out of 5) was obtained, with the participants' performance ranging from 0% to 60%. The participants' performance was poorer than expected, with half of the participants scoring 20% and below.

Waugh (2003:26) investigated the phonological awareness of pre-school ESL children who speak any of the Nguni languages at home as compared to English first language speakers, who all attend an English medium school. A phoneme segmentation task was utilized and average scores of 41.8% (2.09 out of 5) for the ESL group and 34,4% (1.72 out of 5) for the English first language speaker group were obtained (Waugh, 2003:26). Although the aim and target population of the study by Waugh (2003) vary from the present study, it is interesting to note the

similar relatively low scores obtained by the different South African population groups.

Children in pre-school are not expected to perform well on tasks of segmenting words into individual phonemes as this task has been argued to be too difficult for children who are not yet reading (Burt, Holm and Dodd, 1999:322; Chard and Dickson, 1999, quoted Waugh, 2003:27). This is further supported by reports that the majority of children are able to perform such tasks only by the end of grade 1, (Blachman, 1991:61). This notion is further supported by the results of the study by Waugh (2003) as well as the present study. At this stage, although the analysis task might serve as a good predictor of later reading achievement, it is probably not suitable for the population targeted in this study. It is likely that this task might prove helpful with children that are slightly older or in advanced grades.

Phoneme count:

The phoneme count task assessed participants' ability to identify the number of phonemes in a target word by tapping the number of phonemes or using tokens to represent the phonemes (Justice, *et al.,* 2002:93; Lombardino *et al.*, 1999:415).

Figure 15 is a graphical representation of the participants' performance on the phoneme count task as a percentage of the maximum possible correct items.

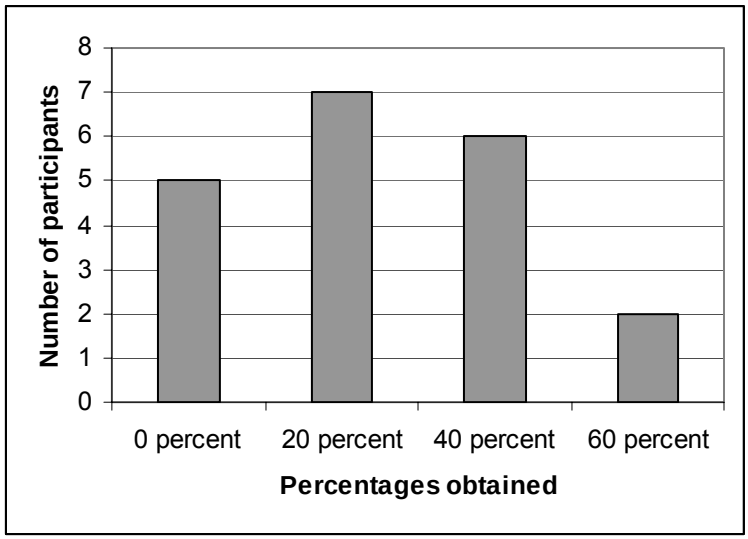

Figure 15: Participants' performance according to percentage on the phoneme count task

A group average of 25% (standard deviation of 1.0 out of 5) was obtained, with the participants' performance ranging from 0% to 60%. The distribution of the participants' performance represents a normal distribution curve to some extent, with a peak at 20%. However, the small sample size makes the application to the larger population problematic. Similar to the other phonological awareness tasks, participants again performed more poorly than expected, with only two participants able to obtain scores of at least 60%.

According to international studies of the phonological awareness of English first language speakers, 70% of six year olds are able to count phonemes in words, while less than 50% of five year olds are able to (Goldsworthy, 1998, quoted in McCord, 2000:3). This suggests that this ability also develops at later stages, whether due to age or increased aptitude due to schooling experience. A more appropriate task for pre-school children might be a syllable segmentation task, where children are required to tap out the number of syllables in a word (Larrivee and Catts, 1999:121).

3.1.4 Letter name knowledge

Letter name knowledge was assessed with the following tasks: alphabet knowledge, the ability to recite the alphabet and rapid letter naming ability.

Figure 16 is a graphical representation of the participants' performance on the alphabet knowledge and the alphabet reciting tasks, representing their original scores. For the alphabet knowledge task, ten letters were chosen to represent the letters in the first names of the participants and the total was made up by randomly selecting other letters (Justice and Ezell, 2002:21). For the alphabet recitation task, participants received one point if they were able to recite the alphabet in full in the right order. Overall, very few participants were able to do any of the tasks. Due to the poor scores obtained, the scores were not converted to percentages.

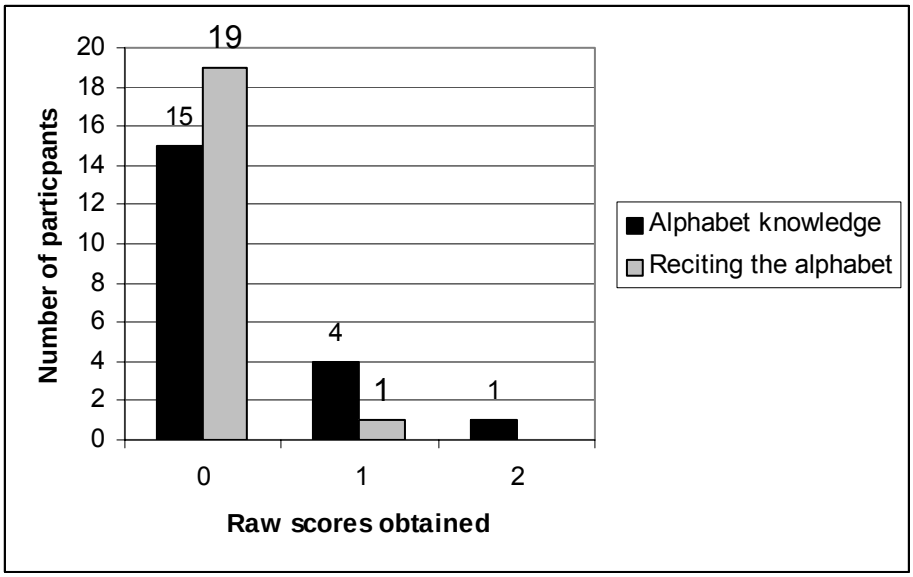

Figure 16: Scores obtained by the participants on the different letter name knowledge tasks

Overall, the participants exhibited poor letter name knowledge. As can be seen from the results, only 4 participants were able to identify one letter of the alphabet and one participant was able to identify two letters. Only one participant was able to recite the alphabet in full by means of an alphabet song that was recently introduced in the classroom. Other participants were also familiar with the song, but could not recall the full song or confused the letter order. Finally, due to the poor performance of the participants on the alphabet knowledge task, the rapid letter-naming task was omitted from the protocol. This was done for the following reasons:

- The rapid letter-naming task also assessed the ability to identify letters as is done with the alphabet knowledge task, but with consideration to the time that is required by a participant to access this knowledge. Since the majority of the

participants were unable to perform the alphabet knowledge task, the rapid letter-naming task was concluded to be inappropriate. Although this measure has been shown to be an important predictor of reading difficulties (ASHA, 2000:364) it is probably more appropriate for learners who have already received some formal literacy instruction.

- In addition, the participant's comfort and fatigue level had to be considered.

Usually, children at this age are able to identify at least some alphabet letters (Justice and Ezell, 2002:17). The participants of this study exhibit poor alphabet knowledge when compared to pre-schoolers in the USA. For example, in one USA study to determine the effectiveness of the Early Reading Screening Instrument in identifying pre-schoolers at risk for developing reading difficulties, a mean score of 8.58 out of a maximum score of 10 (85.8%) was obtained. The aforementioned result was obtained even though the alphabet knowledge task included the recognition of both upper and lower case letters as well as the ability to write the letters that were presented orally (Lombardino, Morris, Mercado, DeFillipo, Sarisky and Montgomery, 1999:141). In another study, typically developing pre-school children in the USA obtained a mean score of 19.22 out of a possible 26 (i.e. 73.9%) for a letter naming task (Boudreau and Hedberg, 1999:253).

Interestingly, although the present study employed letters from each participant's name for the alphabet knowledge task, only 5 of the participants (i.e. 25%) were able to identify the first letter of their names. Performance on this task was poorer than initially expected, especially since up to 45% of pre-schoolers from lower socio-economic circumstances have been shown to be able to identify the first letters of their names (Justice and Ezell, 2001:129-130). Children's knowledge of the letters in their names, especially the first letter, is noteworthy as this is usually acquired prior to the knowledge of other alphabet names (Justice and Ezell, 2001:132).

Although other factors such as culture and socio-economic status might also contribute to the difference in performance of the participants of the present study as compared to studies conducted both locally and internationally, the most significant contributing factor is probably the curriculum followed in the classroom. The knowledge of letter names is mainly related to instruction and indicates knowledge of

and experience with print (Catts, *et al.,* 2001:39; Craig, Connor and Washington, 2003:32). According to the class educator of the children who participated in the present study, letter name knowledge does not form part of the curriculum followed for the reception class the participants attend. Although some letter knowledge is introduced in the last quarter of the school year (this study was conducted in the third quarter), this is done only as an introduction. Letter name knowledge is only formally taught and facilitated in grade 1. Thus, although letter knowledge is an excellent predictor of later reading skills (Lombardino, L.J., *et al*., 1999:136), within the South African context the assessment of this knowledge for the target population is probably more appropriate in grade 1.

3.1.5 Grapheme-phoneme correspondence:

Grapheme-phoneme correspondence refers to the ability to accurately represent the correlation between letters and sounds, i.e. sound-symbol relationships (Justice *et al.,* 2002:89).

Figure 17 is a graphical representation of participants' performance on this task, representing their original scores out of a possible maximum of 10 points. Due to the poor scores obtained, the scores were not converted to percentages.

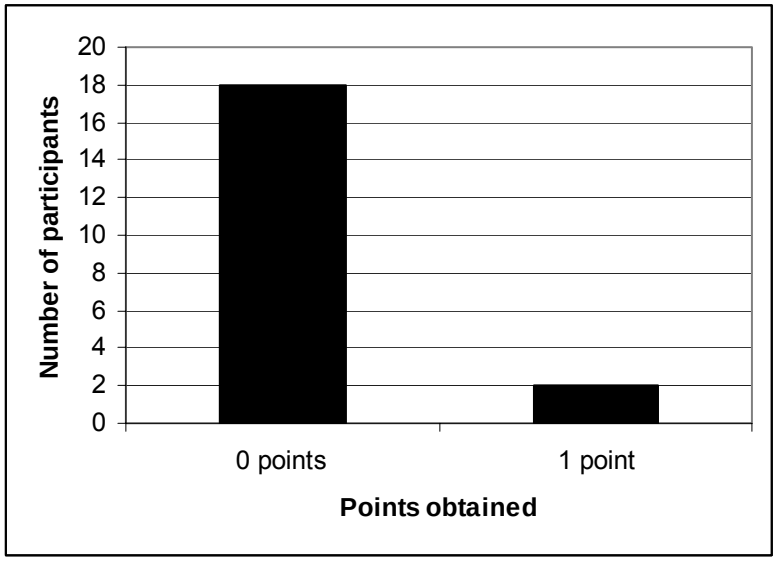

Figure 17 Participants' performance on the grapheme-phoneme correspondence task according to the scores obtained.

Overall, participants' performance on the grapheme-phoneme correspondence task reflected their performance on the letter name knowledge tasks. As can be seen from the results, only two of the participants were able to identify one of the grapheme-phoneme associations. Typically, children do not acquire these skills naturally, but it is rather taught to children over time by teachers and parents in the later stages of literacy development and it entails a complex interaction of skills and knowledge (Justice, *et al.,* 2002:89; Dodd and Carr, 2003:128). The participants' class educator again confirmed that the children have not yet been exposed to such activities in the classroom and that it is addressed in the grade 1 classroom. Thus, although grapheme-phoneme correspondence is an important aspect of literacy acquisition, assessment of this knowledge is more appropriate and necessary for children beyond grade one (ASHA, 2000:364; Lombardino, Morris, Mercado, DeFillipo, Sarisky and Montgomery, 1999:138; Dodd and Carr, 2003:129).

At this stage, this task cannot be utilized to identify any delays in the acquisition of grapheme-phoneme correspondence of the target population.

3.1.6 Literacy motivation:

Literacy motivation refers to children's interest in or orientation towards early literacy experiences (Justice, *et al*., 2002:89). The following two measures were utilized to assess literacy motivation.

Firstly, pictures of literacy activities were shown to the participants, who had to indicate whether the characters on the pictures were happy or sad (Justice, *et al.,* 2002:93).

Figure 18 represents the number of participants who responded by indicating that the characters on one picture are sad and the other happy, as well as the number of participants who indicated that the characters on both pictures are happy.

Figure 18: Participants' responses for the first literacy motivation task

The pictures shown to the participants were adapted so that the characters on the pictures showed no specific emotions (Appendix H). As can be seen from the results, 11 of the participants indicated that the characters on one picture is sad and the other happy. Nine participants indicated that the characters on both pictures are happy. Based on these results, it is doubtful whether this task is valid for assessing literacy motivation, as most of the participants just seemed to switch between the two alternatives of happy and sad, without associating any emotion with the specific activities of the characters in the pictures.

For the second part of the assessment, participants were observed while busy with a variety of literacy tasks and their level of engagement was described on a continuum from a no/ low engagement level to a high engagement level (Justice, *et al.,* 2002:93). Since Justice *et al.* (2002) did not propose specific criteria; the following criteria were used for this study:

- No/ low engagement: A child who did not seem to participate in any literacy activities, never initiated literacy related activities and seemed uninterested in literacy-related activities, with poor participation or even avoidance of literacy activities.
- Below average engagement: Children who show less interest in literacy related activities than their peers, participate less in these activities than their peers, but do not necessarily seem to avoid these activities.
- Average: Children who participate at the same level in literacy activities as the majority of their peers, who seem to enjoy literacy-related activities and are able to continue with these activities until the activity is completed.

- Above average: Children who participate more in literacy activities than the majority of their peers, children who are likely to initiate literacy-related activities and seem to enjoy these activities.
- High engagement: Children who seem to give preference to literacy-related activities, who often initiate literacy-related activities such as looking at books, telling stories, pretending to write, etc. Children that exhibit a noticeably deeper interest in literacy-related activities as compared to their peers.

Figure 19 provides a graphical representation of the participants according to their level of engagement in literacy activities, as measured on a continuum ranging from low engagement to high engagement.

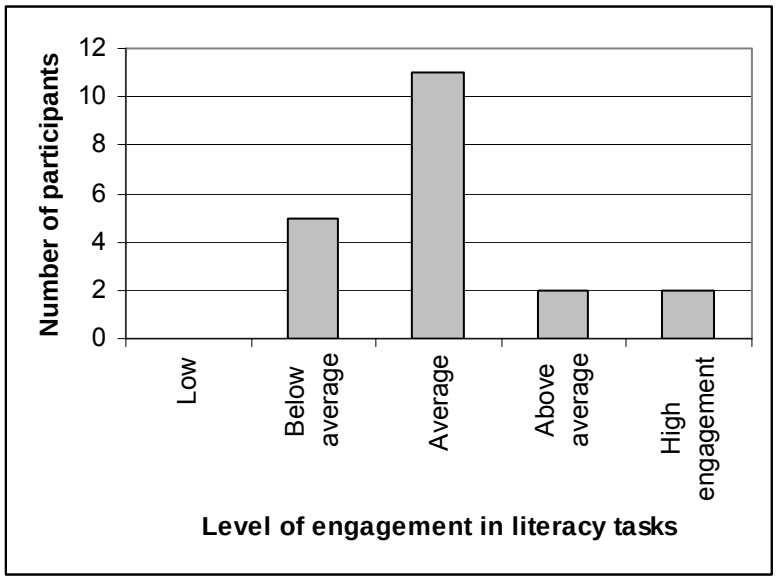

Figure 19: The distribution of participants according to their level of engagement on a variety of literacy tasks

The majority of the participants (55%, 11 participants) were observed to have an average engagement in literacy activities, while 15% (3 participants) were observed to have below average engagement in literacy activities. Ten percent (2 participants) of the participants showed above average involvement in literacy activities and another ten percent (2 participants) showed high engagement in literacy activities. Although these findings cannot be generalized to a larger population due to the small sample size, the distribution of the participants as observed in figure 19 does represent a normal distribution curve with most of the participants exhibiting average

involvement in literacy activities. This measure is subjective and based on the observations by the researcher and the participants' class educator. Although other data regarding the utilization of this procedure could not be obtained, the subjective nature of this measure makes comparison with other population groups difficult. However, the advantage of this measure probably lies in the fact that participants are compared to their peer group. The greatest value of this measure probably lies in its use together with other measures as well as for planning intervention.

3.2 Factors that may influence early literacy development

The difference in the performance on early literacy tasks of the target population of this study when compared to other groups, both locally and internationally, again accentuates the necessity of using local norms that reflect the demographics of a particular school system, since children from different countries learn reading at slightly different ages (Lombardino, et *al.,* 1999:145).

In order to identify possible risk criteria that might be indicative of delayed early literacy development for the targeted population, participants were grouped according to specific characteristics, including their mothers' level of education, gender, participants' level of engagement in literacy activities and participants' current academic performance. Participants' performance according to their mothers' education level, gender, level of engagement in literacy activities and their current academic performance was studied by using appropriate statistical procedures in order to identify any significant differences between the groups. Since all the participants were from poorer socio-economic circumstances, this aspect is also discussed.

Mother's education level

In order to investigate the influence of a mother's literacy level on the performance of the participants on the various tasks, the participants were grouped according to their mothers' literacy level. The mothers of all the participants had a primary school, grade 8 or matric level of education. The Kruskal-Wallis test statistic (Leedy and Ormrod, 2005:274) was utilized in order to determine whether a significant difference

in the performance of the three groups of participants on the various early literacy aspects assessed, could be identified.

With the exception of the recognition and identification of traffic signs (a test item for situation-dependent print), no significant difference in the performance of the three groups across all the aspects assessed was found. As discussed earlier, the use of traffic signs to assess situation-dependent print awareness, is probably not suitable for the population targeted in the present study.

Thus, no specific trend regarding the influence of the mother's education level on the performance of the participants on the various tasks could be identified.

Although research documents that family income and a mother's education level are strong predictors of a child's academic success (Roseberry-Mckibbin, 2002:2), no specific correlation could be found in this study between the mother's literacy level and the participants' performance on the various tasks. After consultation with the class educator, it was discovered that many of the participants have parents working far from home. As a result, many participants are being cared for by members of the extended family such as grandmothers and aunts, either on a daily or weekly basis. Another possible contributing factor is that although it is widely believed that some home literacy activities like storytelling is a daily occurrence in traditional black African homes, there are usually no fixed story times (Winer, 1992:139). Finally, although not measured formally, the educator indicated that many of the parents believe that any literacy learning or stimulation is primarily the responsibility of the school. This perception should probably be investigated further with future research.

Gender:

In order to compare the performance of boys and girls, the scores obtained across all the areas assessed were analyzed according to gender. The Mann-Whitney test (Leedy and Ormrod, 2005:274), a non-parametric test procedure, was utilized to identify any meaningful differences in the performance of the two genders.

With the exception of the identification and recognition of traffic signs (one of the test items for situation-dependent print), the difference between the two genders was

found to be insignificant. With respect to the identification and recognition of traffic signs, there was a significant difference between boys and girls on a 5% level of significance.

Research findings regarding gender differences are mostly conflicting, but girls have often been reported to have superior language and reading abilities (Dodd and Carr, 2003:130). Although the sample size is probably too small to recognize any specific tendency with regard to the literacy acquisition of the different genders, the results of this study suggests similar performance on the tasks for both boys and girls. It has been suggested that girls exhibit better phonological output than boys at 2.5 years, but that this advantage is lost by four years (Burt, *et al*., 1999:320). Hence, gender does not appear to be a risk factor for early literacy acquisition delays.

Level of engagement in literacy activities

In order to determine whether there is a correlation between the participants' level of engagement in literacy activities and their performance on other measures of early literacy skills, the participants were grouped according to their level of engagement in literacy activities. Most of the participants exhibited an average level of engagement, with a smaller number of participants exhibiting below average, above average and high involvement. It should be noted that the small number of participants in these categories does limit the deductions that can be drawn from the results of the statistical analysis procedures. For the statistical analysis, the above average and high involvement in literacy activities categories were combined. The Kruskal-Wallis test statistic (Leedy and Ormrod, 2005:274) was utilized in order to determine whether significant difference in the performance of the three groups on the various aspects assessed, could be identified.

This multiple comparison procedure indicated that the average and above-average group differ significantly at a 10% level of significance with regard to participants' knowledge of print and book reading conventions. The mean scores obtained by the different groups on the knowledge of print and book reading conventions assessment task are summarized in Table 6.

Table 6: Mean scores obtained on knowledge of print and book reading conventions tasks by the participants grouped according to their level of literacy engagement

Level of engagement	*Mean score:*	*Converted to percentage*
Below average engagement	8.2	68.3%
Average engagement	8.1	67.5%
Above average engagement	10.5	87.5%

From these scores, it appears that participants who exhibited above average involvement in literacy activities, exhibited better awareness and knowledge of print and book reading conventions than participants who exhibited average or below average engagement in literacy activities. Alternatively, the participants who exhibited better awareness and knowledge of print and book reading conventions showed a higher level of literacy involvement than those participants who had a poorer knowledge of print and book reading conventions.

A significant difference at a 10% level of significance was also observed between the below average and average group with regard to the production of words with a target phoneme, which was assessed as part of phonological awareness. The mean scores obtained by the different groups on this assessment task are summarized in Table 7.

Table 7: Mean scores obtained on productions of words with a target phoneme task by the participants grouped according to their level of literacy engagement

Level of engagement	*Mean score:*	*Converted to percentage*
Below average engagement	0.6	12%
Average engagement	2.5	50%
Above average engagement	2.8	56%

Based on these scores, it seems that participants with a higher level of engagement in literacy activities obtained higher scores for the production of words with a target phoneme.

Although the level of engagement is the most subjective measure of all the aspects included in the protocol, there seems to be a correlation between better performance on some early literacy tasks and increased engagement in literacy activities.

Interestingly, the only two participants that were observed to show a high engagement in literacy activities did not obtain the highest average scores across the different dimensions. One possible explanation is that these two participants might have a particular interest in these activities but not necessarily a particular aptitude. However, the small sample size makes specific interpretation difficult. The link between children's literacy motivation and their performance on literacy tasks has been shown to be significant (Justice, *et al*., 2002:88, 89) and has also been observed in the current study, specifically with regard to the knowledge of print and book reading conventions, as well as the phonological awareness task of producing words with specific target phonemes.

Academic performance:

In order to determine whether participants' current academic performance provides an indication of participants' performance on a series of early literacy tasks, participants were grouped according to their current academic performance and the scores obtained across all the areas assessed were analyzed. The Kruskal-Wallis test statistic (Leedy and Ormrod, 2005:274) was utilized in order to determine whether significant differences in the performance of the three groups on the various aspects assessed, could be identified. It should be noted that the small sample size and especially the few observations in the above average and below average categories limit the interpretation of the data.

A significant difference at a 10% level of significance was found between the under average academic performance and above average academic performance group with regard to the production of words with a target phoneme task. The mean scores obtained by the different groups on this assessment task are summarized in Table 8.

Table 8: Mean scores obtained according to participants academic performance: productions of words with a target phoneme

Academic performance	*Mean score:*	*Converted to percentage*
Under average academic performance	1.3	26%
Average academic performance	1.9	38%
Above average academic performance	3.7	74%

Based on these results, it seems that participants who exhibit above average academic performance obtain higher scores on this specific phonological awareness task.

A significant difference at a 5% level of significance was found between the under average academic performance group and the average academic performance group with regard to the identification and recognition of common logos, one of the assessment categories for situation-dependent print. The mean scores obtained by the different groups on the identification and recognition of common logos, are summarized in Table 9.

Table 9: Mean scores obtained according to participants' academic performance: identification and recognition of common logos

Academic performance	*Mean score:*	*Converted to percentage*
Under average academic performance	6	100%
Average academic performance	4	66.7%
Above average academic performance	5.3	88.3%

Interestingly, the participants with under average academic performance were all able to identify all of the stimuli items. The participants with average academic performance performed the poorest on this task. Due to the small sample size and the surprising results, it is difficult to draw any specific conclusion with regard to the correlation between academic performance and the identification and recognition of common logos.

Finally, a significant difference at a 5% level of significance was found between the under average academic performance group and the above average academic performance group with regard to the identification and recognition of traffic signs, one of the assessment categories for situation-dependent print. The mean scores obtained by the different groups on this assessment task are summarized in Table 10.

Table 10 Mean scores obtained according to participants' academic performance: identification and recognition of traffic signs

Academic performance	*Mean score:*	*Converted to percentage*
Under average academic performance	0.8	16.7%
Average academic performance	2.2	36.7%
Above average academic performance	3.7	61.7%

These results suggest that participants with better academic performance obtain higher scores for the identification and recognition of traffic signs. However, the small sample size again limits the deductions that can be made from these results.

Overall, the participants' current academic performance was only found to be significant for these specific tasks. At this stage, academic performance is probably not an indicator of early literacy skills. As discussed earlier, many of the early literacy skills assessed in this research do not form part of the curriculum, which is the means by which academic performance is determined. However, it is likely that academic performance will be influenced negatively in advanced grades by early and later literacy achievement (Boudreau and Hedberg, 1999:249).

Socio-economic status:

Although the precise nature of the relationship between phonological awareness and socio-economic status remains vague, children from poorer socio-economic circumstances have been shown to perform more poorly on these tasks than their peers from middle class circumstances (Burt, Holm, and Dodd, 1999:323; Justice and Ezell, 2002:18; Dodd and Carr, 2003:135; Harris, 2003:18; Justice and Ezell, 2001:130). The poorer performance is usually attributed to various reasons, including:

- There are differences in language learning environments and play activities of the two groups (Burt, et *al*., 1999:323).
- Children from poorer socio-economic circumstances have fewer resources and fewer available books, resulting in less opportunity to explore written material that stimulates phonological awareness development (Burt, *et al*.,

1999:323). Literacy activities are more likely to occur if literacy resources are available (Hammer, Miccio and Wagstaff, 2003:21).

Although no specific South African data is available, it is possible that these explanations are universally applicable.

Thus, poorer socio-economic circumstances seem to place a child at risk for developing reading difficulties, although the permanence of the effect of lower socio-economic circumstances on literacy acquisition cannot be assumed (Harris, 2003:81).

3.3 Possible risk criteria that may affect early literacy development

Based on the results and previous discussion of the present study, as well as a study of other known risk criteria as identified by various researchers, the factors listed below might indicate possible risk of delayed early literacy development for this specific target population, i.e. pre-school, five to six year old, Sepedi-speaking children, residing in Atteridgeville and attending Grade R. Since no other research on the early literacy skills of the target population is available, the average was rounded off and used as a reference in order to determine possible risk factors, which are summarized below. It should be noted that the percentages reflect the performance of the study participants on the specific tasks utilized in the study.

- Performance of less than 72% on print and book reading conventions tasks.
- Performance of less than 59% on discrimination of literacy terms tasks.
- Performance of less than 84% on the letter orientation and discrimination task.
- Inability to identify own name in written form.
- Performance of less than 79% average for identifying relevant common logos, generic products and food products.
- Written language productions that still represent proto-writings. Productions representing letters and letter like shapes or even pre-phonemic invented spelling are preferable.
- Inability to produce narratives similar to the story text, although not verbatim.
- Performance of less than 34% on phonemic alliteration detection tasks.
- Performance of less than 41% on production of words with a target phoneme task.

- Below average engagement in literacy activities.

The analysis and phoneme count tasks were found to be inappropriate for this specific population and is not included. However, the inclusion of these tasks on syllabic level can be investigated in future.

Other risk factors that have been identified in literature include, but are not limited to:

- The presence of a hearing loss: A hearing loss may significantly influence language development, which in turn has been shown to be interrelated with early literacy skills (Owens, 1995:424; Roth and Baden, 2001:163).
- The presence of a marked impairment in cognitive abilities as compared to the peer group, as these factors have been shown to correlate with early and later literacy problems (Justice, *et al.,* 2002:87).
- The presence of attention deficits or behavioural problems, since these factors are associated with weaker achievement on early literacy tasks (Justice, *et al.,* 2002:89).
- The presences of any language disorder, especially apparent in oral language development, since reading difficulties are language-based disorders (Catts, 1997:86; Catts, Fey, Zhang and Tomblin, 2001:38; Kaderavek and Sulzby, 2000:35; Harris, 2003:17).
- The presence of speech difficulties. Children with speech difficulties are more likely to struggle with literacy acquisition than children who do not have speech difficulties (Nathan, Stackhouse, Goulandris and Snowling, 2004:377, 389).
- A family history of reading difficulty or disability. This factor has been shown to be a strong predictor of literacy attainment (Justice, *et al.,* 2002:87).

Table 11 summarizes the risk criteria discussed. This table might be used as a checklist for identifying risk criteria that might affect the early literacy development of pre-school Sepedi children.

Table 11: Risk indicators for early literacy development checklist (to be used with the early literacy tasks as compiled in the protocol)

Factor	Performance by child (Tick where appropriate)	
	Normal	**Risk indicator**
Print and book reading conventions	Performance of 72% or higher	Performance of less than 72%
Discrimination of literacy terms	Performance of 59% or higher	Performance of less than 59%
Letter orientation and discrimination	Performance of 84% or higher	Performance of less than 84%
Own name identification	Able to identify own name	Unable to identify own name
Identifying common logos, generic products and food products	Performance of 79% or higher	Performance of less than 79%
Written language productions	▪ Productions representing letters and letter like shapes ▪ Pre-phonemic invented spelling	Proto-writings
Narrative abilities	▪ Produces a story similar to text, although not verbatim ▪ "Reads" memorized text	▪ Labels pictures, no story formulated ▪ Describes pictures with action present ▪ Creates narrative to match illustration, but is not a story ▪ Produces dialogue linking pictures but does not form a whole story ▪ Produces story different form actual text, but follows the conventions of a story.
Phonemic alliteration detection	Performance of 34% or higher	Performance of less than 34%
Production of word with target phoneme	Performance of 41% or higher	Performance of less than 41%
Engagement in literacy activities	▪ Average involvement ▪ Above average involvement ▪ High involvement	▪ Below average involvement ▪ Low involvement
	Other risk factors	

Family history of reading difficulty/ disability	Impairment in cognitive abilities	Presence: attention deficits/ behavioural problems
Language disorder	Speech difficulties	Hearing loss

4. Conclusions and implications

The following conclusions can be drawn, based on the participants' performance results on the protocol:

- The aim of this study was to collect local norms for five to six-year old Sepedi pre-school children residing in Atteridgeville and to determine what early literacy abilities are typical of this population. The results of the study showed that although these participants exhibit early literacy skills, these skills are more immature when compared to other local and international data. This finding once again accentuates the necessity of assessment and intervention procedures that consider the unique influence of factors such as socio-economic status, family literacy and specific learning environment. Results of any study should thus be interpreted according to the norms obtained in a specific community (McCord, 2000:44).
- The original protocol utilized provided some insight into the early literacy skills of this specific population, although some tasks were found to be inappropriate. The influence of instruction in the development of early literacy skills could clearly be observed in this study. Consider the performance of the participants on the narrative task, which forms part of their curriculum at school with the letter name knowledge and grapheme-phoneme correspondence tasks, to which the participants have not been exposed.
- In contrast to other research findings, the mother's level of education was not found to be specifically related to a child's early literacy skills. As discussed earlier, this phenomenon can probably be attributed to the unique social circumstances of this population, who are from a previously disadvantaged community. This implies that many of the participants probably remain in the care of other family members while their parents travel to their work places on a daily, weekly of monthly basis.

The current study contributed to the field of communication pathology since it provided some insight into the early literacy skills of pre-school Sepedi-speaking children in Atteridgeville. The protocol supplied a comprehensive means of assessing early literacy skills across several domains of early literacy. The results provided a representation of the typical early literacy skills of a pre-school Sepedi

speaking child residing in Atteridgeville. In addition, the study helped to identify and gain insight into some of the factors that influence early literacy development.

It was attempted to develop a cost effective, culturally sensitive measure that is able to identify the child with atypical development from a typically developing child, with consideration to the unique social and cultural influences on literacy acquisition (Craig and Washington, 2000:367, Harris, 2003:17; Justice, *et al.,* 2002:90). The protocol employed in the study, with the suggested modifications, provides such a measure for the target population. A risk-indicator checklist was also suggested as a means of determining whether a child exhibits any of the risk criteria associated with delays in the development of early literacy skills.

Ideally, children at risk for developing reading disabilities should be identified before formal reading instruction is started (Catts, Fey, Tomblin and Zhang, 2002:1155). Either the original protocol or an adapted protocol can be employed as an informal assessment tool to assess and monitor early literacy skills development and can also be used to guide intervention goals (Justice, *et al.,* 2002:94).

Although the study did yield interesting information, the following limitations in the research design and implementation are evident:

- Language must be seen as the greatest limiting factor of this research. Although a Sepedi interpreter was employed, it is likely that some of the information was lost in the translation process, since the researcher has very limited knowledge of Sepedi. However, this probably reflects the working condition of many South African clinicians, who often have to work with interpreters (Tuomi, 1994:6).
- The lengthy administration time of approximately 60 minutes is acknowledged. Although participants indicated when they became tired and required a break, the influence of external and intrinsic factors such as fatigue, concentration span and available time that could influence the validity of the data cannot be determined.
- Since the accessibility of literacy materials and a child's participation in daily household activities have been shown to be the most significant environmental factors relating to early literacy acquisition, the exclusion of home literacy is a

limitation of this study that should be investigated further in future (Gillam and Johnston 1985:521). Ideally, the influence of oral and literate traditions in the home environment of children should be considered when narrative abilities are assessed (Crais and Lorch, 1994:13-14).

- The use of convenience sampling is another limitation of the study. The distinctiveness of such samples may deviate in unknown ways from the characteristics of the target population, which makes it more difficult to determine what results can be generalized to the target population and what not (Catts, *et al.,* 2001:39). In this study, where the target population is pre-school Sepedi children, the results obtained reflected the abilities of children that attend pre-schools. The possibility exists that the results may not be appropriate for the target population that does not attend pre-school, or even for children attending a different pre-school.
- The relatively small sample limits the possible generalization of the results (Fair, 2001:68; Verwoerd, 2000:33).
- Lance, Swanson and Peterson (1997) suggested that while the phonological awareness measures that are presently employed have predictive value for early and later literacy skills, implicit phonological measures such as the nonsense-word paradigm might be a better measure since the assessment tasks are not used in the instruction and training of phonological awareness, as is the case with widely used phonological awareness measures.
- No formal, standardized procedures exist to assess the early literacy skills of this population. It should be noted that although great effort was taken to ensuring the reliability and validity of the informal, non-standardized measures utilized in this study, reliability and validity cannot be guaranteed. Thus, the reliability and validity of these procedures need to be verified by further research.
- The influence of home literacy on the development of the early literacy skills of Sepedi-speaking children should be investigated, since the home environment establish attitudes about literacy that probably augment or diminish learning (Dodd and Carr, 2003:135). This could be investigated by means of parent interviews or parent questionnaires (ASHA, 2000:363).
- Finally, until standardized measures are available, the results of this study are preliminary.

Since this study was exploratory in nature, a logical implication for further research is the continuation of the study with a bigger sample and other groups. This will make generalization to a bigger population and comparison between groups possible.

Although the screening protocol suggested by Justice, Invernizzi and Meier (2002:93) appears comprehensive, other researchers have suggested the inclusion of the following in the assessment of early literacy skills, which could be researched in future:

- The use of nonsense word stimuli rather than real word stimuli in the assessment of phonological awareness measures can be considered, since this will limit the influence of word knowledge on the skill assessed (Lance, Swanson and Peterson, 1997). It should be noted that nonsense words might also be influenced by associated lexical skill (Lance, *et al.,* 1997:1003).
- A similar study for the same group in a different geographical area could be conducted, as this will help to expand the information on the development of early literacy skills of South African children.
- This research should also be replicated with other culture groups, as variation exists between the literacy accomplishments of children from diverse language backgrounds (Gutierrez-Clellen, 1999:285).

Research regarding the development of early literacy skills of South African children from the different cultural and languages groups, as well as from different geographical areas, is urgently needed. The standardization of early literacy measures in future research could be of great benefit to clinical practice, as this would enable the clinician working with this population group to evaluate the early literacy performance of an individual against the performance by his/ her peers as well as verify intervention effectiveness (Justice and Ezell, 2002). This will ensure that these measures are culturally appropriate and consider the complex influence of factors such as socio-economic status, school experience and school curriculum.

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Appendix A

GAUTENG DEPARTMENT OF EDUCATION

RESEARCH REQUEST FORM

REQUEST TO CONDUCT RESEARCH IN INSTITUTIONS AND/OR OFFICES OF THE GAUTENG DEPARTMENT OF EDUCATION

1. PARTICULARS OF THE RESEARCHER

1.1	**Details of the Researcher**
Surname and Initials:	Schutte, H.
First Name/s:	Henriëtte
Title (Prof / Dr / Mr / Mrs / Ms):	Mrs
Student Number (if relevant):	96105594
ID Number:	770302 0010 080

1.2	Private Contact Details
Home Address	*Postal Address (if different)*

973 Vleivalk Street	***PO Box 780***
Montana Park	***Magalieskruin***
Pretoria	
Postal Code	*Postal Code:* ***0150***
Tel: ***(012) 373 9121 (w) & (012) 548 1038***	
Cell: ***082 787 1244***	
Fax: ***(012) 548 6696***	
*E-mail:***hschutte@mweb.co.za**	

2. PURPOSE & DETAILS OF THE PROPOSED RESEARCH

2.1	Purpose of the Research (Place cross where appropriate)
Undergraduate Study - Self	
Postgraduate Study - Self	**X**
Private Company – Commissioned by Provincial Government or Department	
Private Research by Independent Researcher	
Non-Governmental Organisation	
National Department of Education	
Commissions and Committees	
Independent Research Agencies	
Statutory Research Agencies	
Higher Education Institutions	

2.2	Full title of Thesis / Dissertation / Research Project
Early literacy skills of preschool Sepedi-speaking children residing in Atteridgeville.	

2.3	Value of the Research to Education (Attach Research Proposal)
Information on the early development of literacy skills in young children might help to identify possible risk factors that might later hinder literacy acquisition, which can then be addressed. This information might also guide stimulation of early literacy skills in young children	

2.5	Student and Postgraduate Enrolment Particulars (if applicable)
Name of institution where enrolled:	University of Pretoria
Degree / Qualification:	M. Communication Pathology
Faculty and Discipline / Area of Study:	Human Sciences: Speech Language Therapy & Audiology

Name of Supervisor / Promoter:	Mrs E Naude

2.6	**Employer (where applicable)**	
Name of Organisation:		Zodwa School (for LSEN)
Position in Organisation:		Speech Therapist
Head of Organisation:		Mrs ED Mafa
Street Address:		487 Maunde Street, Atteridgeville
Postal Code:		0008
Telephone Number (Code + Ext):		012-373 9121
Fax Number:		012-373 4515
E-mail:		-

2.7	**PERSAL Number (where applicable)**

1	9	1	7	3	1	6	4

3. PROPOSED RESEARCH METHOD/S

(Please indicate by placing a cross in the appropriate block whether the following modes would be adopted)

3.1 *Questionnaire/s (If Yes, supply copies of each to be used)*

YES		**NO**	**X**

3.2 *Interview/s (If Yes, provide copies of each schedule)*

YES		**NO**	**X**

3.3 *Use of official documents*

YES		**NO**	**X**
If Yes, please specify the document/s:			

3.4 ***Workshop/s / Group Discussions (If Yes, Supply details)***

YES		NO	X

3.5 ***Standardised Tests (e.g. Psychometric Tests)***

YES		NO	X
If Yes, please specify the test/s to be used and provide a copy/ies			
As no standardized tests exist to evaluate early literacy skills of Sepedi speaking children, a series of informal tasks will be used to assess the children's early literacy skills.			

4. INSTITUTIONS TO BE INVOLVED IN THE RESEARCH

4.1 ***Type of Institutions (Please indicate by placing a cross alongside all types of institutions to be researched)***

Primary Schools	X
Secondary Schools	
ABET Centres	
ECD Sites	
LSEN Schools	

Further Education & Training Institutions	
Other	

4.2 ***Number of institution/s involved in the study (Kindly place a sum and the total in the spaces provided)***

Type of Institution	**Total**
Primary Schools	**3**
Secondary Schools	
ABET Centres	
ECD Sites	
LSEN Schools	
Further Education & Training Institutions	
Other	
GRAND TOTAL	**3**

4.3 ***Name/s of institutions to be researched (Please complete on a separate sheet if space is found to be insufficient)***

Name/s of Institution/s
JJ de Jong Primary
Matseke Primary
Seshegong Primary

4.4 District/s and other GDE Offices where the study is to be conducted. ***(Please indicate by placing a cross alongside on all districts to be canvassed)***

District	
Johannesburg East	
Johannesburg South	
Johannesburg West	
Johannesburg North	
Gauteng North	
Gauteng West	
Tshwane North	
Tshwane South	**X**
Ekhuruleni East	
Ekhuruleni West	
Sedibeng East	
Sedibeng West	

Office/s (Please indicate)

NOTE:

If you have not as yet identified your sample/s, a list of the names and addresses of all the institutions and districts under the jurisdiction of the GDE is available from the department at a small fee.

4.5 *Number of pupils to be involved per school*

Please note: grade R learners will be used.

Grade	R		1		2		3		4		5		6	
Gender	B	G	*B*	*G*	*B*	*G*	*B*	*G*	*B*	*G*	*B*	*G*	*B*	*G*
Number	5	5												

Grade	7		8		9		10		11		12	
Gender	*B*	*G*	*B*	*G*	*B*	*G*	*B*	*G*	*B*	*G*	*B*	*G*
Number												

4.6 *Number of educators/officials involved in the study*

Type of staff	*Teachers*	*HODs*	*Deputy Principals*	*Principal*	*Lecturers*	*Office Based Officials*
Number	*0*	*0*	*0*	*0*	*0*	*0*

4.7 Are the participants to be involved in groups or individually?

Participation	
Groups	
Individually	**X**

4.8 Average period of time each participant will be involved in the test or other research activities (Please indicate time in minutes)

Participant/s	**Activity**	**Time**
Gr R boys and girls	**Series of early literacy tasks**	**On average: 30-35 minutes**

4.9 Time of day that you propose to conduct your test/research.

School Hours	*During Break*	*After School Hours*
X		

4.10 School term during which the research would be undertaken

First Term	*Second Term*	*Third Term*
X	**X**	

DECLARATION BY THE RESEARCHER	
1. I declare that all statements made by myself in this application are true and accurate.	
2. I have taken note of all the conditions associated with the granting of approval to conduct research and undertake to abide by them.	
Signature:	
Date:	

DECLARATION BY SUPERVISOR / PROMOTER / LECTURER	
I declare that: -	
1. The applicant is enrolled at the institution / employed by the organisation to which the undersigned is attached.	
2. The questionnaires / structured interviews / tests meet the criteria of: • Educational Accountability • Proper Research Design • Sensitivity towards Participants • Correct Content and Terminology • Acceptable Grammar • Absence of Non-essential / Superfluous items	
Surname:	
First Name/s:	
Institution / Organisation:	
Faculty / Department (where relevant):	
Telephone:	
Fax:	
E-mail:	
Signature:	
Date:	

N.B. This form (and all other relevant documentation where available) may be completed and forwarded electronically to either Ntombi Maswanganyi (violetm@gpg.gov.za) or Nomvula Ubisi (nomvulau@gpg.gov.za). The last 2 pages of this document must however contain the original signatures of both the researcher and his/her supervisor or promoter. These pages may therefore be faxed or hand delivered. Please mark fax - For Attention: Ntombi Maswanganyi at 011 355 0512 (fax) or hand deliver (in closed envelope) to Ntombi Maswanganyi (Room 910) or Nomvula Ubisi (Room 914), 111 Commissioner Street, Johannesburg.

Appendix B

The Principal
_____Primary School

Letter of consent to conduct research

Under the jurisdiction of: **The Department of Communication Pathology, Faculty of Humanities, University of Pretoria, Pretoria, 0002**
Tel: 012-420 2357, Fax: 012-420 3517
By: **H. Schutte**
Tel: 082 787 1244/ 012- 373 9121

Date:_____

Sir/ Madam

Letter of consent

I am a Master's Degree student in Communication Pathology at the University of Pretoria. I have decided to do research about the early literacy skills of Sepedi-speaking Grade R children between five and six years of age. The results of the research will be reported in writing under the title "The development of early literacy skills in an urban Sepedi-speaking setting". I hereby request your school's participation.

The aim of the study is to compile data on the normal development of early literacy skills of these children. For this purpose, children attending the Grade R class will be assessed on a series of early literacy tasks for approximately 30 minutes per child. Each child will only be assessed once. Children will be asked to will be asked to do some tasks, such as looking at pictures and letters, answering questions about pictures and letters and telling a story. Participation will be voluntary and anonymous and will be subject to prior consent of the child's guardian or parent and the child's assent and they may withdraw at any time. Information relevant to the study i.e. school performance and mother's literacy level will also be requested. There will be no costs involved. The Gauteng Department of Education has granted permission for conducting the research project and the research will only commence once you have confirmed permission in writing.

All information will be handled strictly confidentially and the results will be published anonymously in a research dissertation. Should you wish to receive a copy of the results, a summarized version will be made available as soon as the project has been completed.

The study will provide valuable information for the assessment of the early literacy skills of these children and may help to improve the service provision to this population by speech-language therapists.

Please contact me at any time if you have any further questions. Parents will also have the right to contact me at any time.

Yours sincerely

Henriëtte Schutte
M. Communication
Pathology Student
University of Pretoria

Mrs. E Naude
Supervisor
Department of Communication Pathology
University of Pretoria

Prof. B Louw
Head
Department of Communication Pathology
University of Pretoria

Appendix C

Letter of consent to participate in research to be done under the jurisdiction of the Department of Communication Pathology, University of Pretoria by H. Schutte (Contact details: 082 787 1244; 012- 373 9121)

Date:_____

Dear parents

I am a Master's Degree student in Communication Pathology at the University of Pretoria. I plan to conduct research about the early literacy skills of Sepedi-speaking Grade R children between five and six years of age. The results of the research will be reported in a research report with the title "The development of early literacy skills in an urban Sepedi-speaking setting". I hereby ask for your permission to include your child in the study.

The aim of the study is to compile data on the normal development of early literacy skills (getting ready to read and write) of these children, in order to enable teachers and therapists to identify children who need help in developing these skills. Your child will be asked to do some tasks, such as looking at pictures and letters, answering questions about pictures and letters and telling a story. The translator and I will be introduced to your child before the research starts. The research will be done during non-academic time (such as break time) at school and will only use a fraction of this time. This will take approximately 30 minutes and will only be done once. The research will be done at school and is voluntary and free. If you give your permission, your child will be included if he/she is willing to participate. If your child becomes tired, he or she will rest before continuing. Your child will also be informed that he or she may stop participating or leave at any time.

All the information that you provide and that is obtained will be confidential and no one else will have access to the information. When the study is completed, this information will be destroyed. The results of the research can help to improve the service provision by Speech Therapists to Sepedi-speaking children.

If you agree to let your child participate in this research project, please sign the consent form and complete the information (this document is confidential).

Please contact me at any time if you have any questions.

Yours sincerely

Henriëtte Schutte
M. Communication
Pathology Student
University of Pretoria

Mrs. E Naude
Supervisor
Department of Communication Pathology
University of Pretoria

Prof. B Louw
Head
Department of Communication Pathology
University of Pretoria

Lengwalo la go dumela la go tšea karolo dinyakišišong (research) tšeo di lego molaong wa lefapha la tša mmolelo Department of Communication Pathology, Yunibesithi ya Pretoria, ka H. Schutte (nomoro ya mogale ke 082 787 1244 goba 012-373 9121).

Batswadi ba ba rategago

Ke nna moithuti wa Yunibesithi ya Pretoria, ke ithutela tikree ya maemo a godimo ye e bitšwago Communication Pathology. Ke ikemišeditše go dira dinyakišišo tša go bala le go ngwala ka katišišo go baneng ba banyane ba go bolela Sepedi mphatong wa Grade R. Dipoelo tša dinyakišišo di tla hlaloša go repoto ye e bitšwago "The development of early literacy skills in an urban Sepedi-speaking setting". Bjale ke kgopela go šoma le ngwana wa gago thutong ye.

Maikemišetšo a thuto ye, ke go kgobokantšha tsebo ka ga kgodišo ye e tlwaelegilego go ruteng ngwana go bala le go ngwala e sa le yo monnyane. Ka mokgwa wo, go tla thušwa barutiši le ditherapisiti (therapists) go lebedišiša bana ba ba nyakago thušo go ithuta bokgoni bjoo. Ngwana wa gago o tlo kgopelwa go fetša mešongwana ye mengwe go swana le go lebelela diswantšho, go araba dipotšišo ka ga diswantšho le ditlhaka ebile a laodiše nonwane. Monyakišiši le mofetolekwa wa polelo ba tla tsebišwa go ngwana pele ga dinyakišišo e thoma. Ngwana wa gago o tla botšiswa gore o ikemišeditše go tsenela dinyakišišo, le gona o tla botšwa gore a ka tlogela nako ye nngwe le ye nngwe. Dinyakišišo e tla dirwa ka nako yeo e sego ya sekolo (bjalo ka nako ya go ikhutša) (breaktime) sekolong, le gona re tla diriša nakonyane yeo re e fiwego. Go dira ka mokgwa wo, go tla tšea diminite tše 30 (30 minutes) le gona e tla dirwa gatee fela. Dinyakišišo tše di tla dirwa mo sekolong ebile ga di lefiwe, le gona ga di gapeletšwe. Ge o re file tumelelo ya go šoma le ngwana wa gago, o tla dumelwa ge e le gore le yena o ikemišeditše go tšea karolo. Ge ngwana wa gago a lapa o tla letlewa go ikhutša pele a tšwela pele. Ngwana wa gago le yena o tla botšwa gore o a dumelwa go emiša go tšea karolo ge a se sa nyaka, nako ye nngwe le ye nngwe.

Ditaba ka moka mabapi le se, ke sephiri sa go yo a ka tsebago ka ditaba tše. Ge re feditše ka nyakišišo ye ya rena, information yeo e lebanego le ngwana wa gago e tlo senywa. Dipoelo tša nyakišišo ye di tlo ba le mohola go mohlahloši wa tša polelo (speech therapist) le bana bao ba bolelago Sepedi.

Ge o dumelelana le gore ngwana wa gago a tšee karolo go projeke ye ya go nyakišiša, ke kgopela gore o saene foromo, e be o tlatše tše di nyakegago.

O dumeletšwe go founa nako ye nngwe le ye nngwe ge o na le dipotšišo.

Wa lena

Henriëtte Schutte M. Communication Pathology Student University of Pretoria	Mrs. E Naude Supervisor Department of Communication Pathology	Prof. B Louw Head Department of Communication Pathology

Consent form

I hereby grant permission that _____ (name) may participate in the above mentioned research project to be conducted at _____ Primary School.

_____ _____

Signature *Date*

Highest education level of mother:

No schooling	Primary School	Standard 6/ Grade 8	Standard 10/ Grade 12	Tertiary

---

Ke dumela gore ngwana wa ka, e lego (leina le sefane) _____a tšee karolo nyakišišong ye. Ke kwešiša gore nyakišišo e tlo dirwa mo sekolong sa _____.

Maemo a thuto ya mmagongwana:

Go se tsene sekolo	Primary School	Standard 6/ Grade 8	Standard 10/ Grade 12	Thutokgolo ya sekolo (University, Technicon)

Appendix D

RESPONSE FORM: Selection criteria & procedures

1. Number

2. Age

			Months

3. Gender

	Male	1	
	Female	2	

4. Academic achievement:

	Under average	1	
	Average	2	
	Above average	3	

5. Mother's Literacy Level

	No schooling	1	
	Primary School	2	
	Standard 6/ grade 8	3	
	Standard 10/ grade 12	4	
	Tertiary	5	

6. Screening hearing test:

	500Hz	1000Hz	2000Hz	4000Hz	Immitance measures (Type A, B, C)
Left ear					
Right ear					

Appendix E

Preliminary study record sheet

Concept/ Stimulus/ Tasks	Method and material	Instructions English / Sepedi	Results: Subject results (X or ✔) 1	2	3	4	5	Total	%
1.Picture identification	Ask the child to name the 3 items (house, car and pen) depicted on three pictures (line drawings)	*What's this?* Ke eng?							
2.Front	Ask the child to put an object in front of him/ her.	*Put this in front of you.* Bea e mopele ga gago.							
3.Name	Ask the participant the name of the school or a friend.	What is your school's name? Leina la sekolo sa gago ke eng?							
4.Top	Picture of a tree, ask the child to show the top and the bottom of it.	Show me the top. Mpontšhe ka godimo.							
5.Bottom		Show me the bottom. Mpontšhe ka fase.							
6.Begin/ start	i. Show the child a picture of a race, ask him/ her where the beginning is.	*Where is the beginning?* Mathomong ke kae?							
	ii. Play a recording of three non-speech sounds in sequence (i.e. an ambulance, music and a cell phone). Ask the child what sound was at the beginning.	What sound was at the beginning of the tape? Ke modumo ofe o lego mo mathomang a tape?							
7. Longest	Present 3 stripes that are different lengths, ask child to select the longest.	Show me the longest stripe. Mpontšhe mothalo o motelele.							
	ii. Play a recording of two sounds that differ in length, ask the child to identify the longest sound.	*Which sound was the longest?* Ke modumo ofe o motelele?							

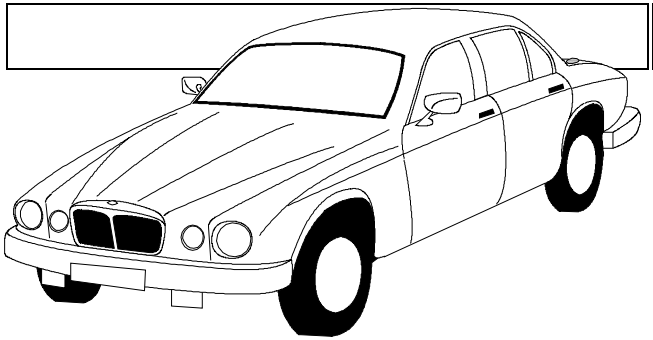
8. Same	5 cards, of which two are the same, child is first asked to show the same ones, then two that are different.	Show me two pictures that are the same. Mpontšhe ditswantšo tšepedi di swanago.							
9.Different		*Show me two pictures that are not the same* Mpontšhe ditswantšo tšepedi tše d sai swanego.							
Concept…	Method...	Instructions	1	2	3	4	5	Total	%
10.Parts/ pieces	Use “Bob the Builder” three-piece puzzles. Ask the child to give you one part.	Give me one piece. Mphe karolo e tee.							
11.Whole	Use two identical pictures with one picture that is only half. Ask the child to identify the one that is “whole”.	Show me which one is whole. Mpontšhe e tletšego							
12. In	Show a picture that is made up of different forms and show the child a circle. Point to the circle and ask the child whether he/she sees it in the picture..	Do you see this in the picture? A, o bona se mo seswantšhona?							
	Play a recorded sound segment, ask the child whether a car tooter is also in the sounds.	Do you hear a car in the sounds? A, o utlwa modumo wa koloi mo medumong?							
13. Sound	Ask the child to clap hands every time they hear a sound. Use a recording of a music instrument that plays the same note 3-4 times.	*Clap you hands every time you hear a sound*. Opa diatla ge o utlwa modumo.							
14.Happy	Ask child to point to the happy picture and the sad picture, include one foil.	Can you show me which child is happy? Mpontšhe ngwana yo a thabile go.							

Unhappy		Can you show me which child is unhappy? Mpontšhe ngwana yo a swabile go.							
15. Cell C	Present 5 stimulus cards, determine which three are the most appropriate	What's this? Ke eng?							
SPAR									
Police									
Telkom									
ABSA									
16. OMO									
Colgate									
Kiwi polish									
Zambuk									
Sunlight									
Concept…	Method...	Instructions	1	2	3	4	5	Total	%
17.Simba									
Inkomazi									
Coke									
Pilchards									
Impala Maize Meal									
18.Stop									
Traffic light									
Bus co/ train									
Pedestrian crossing									
Speed limit									
19.Dragonballz									
Barney									
Sesame street									

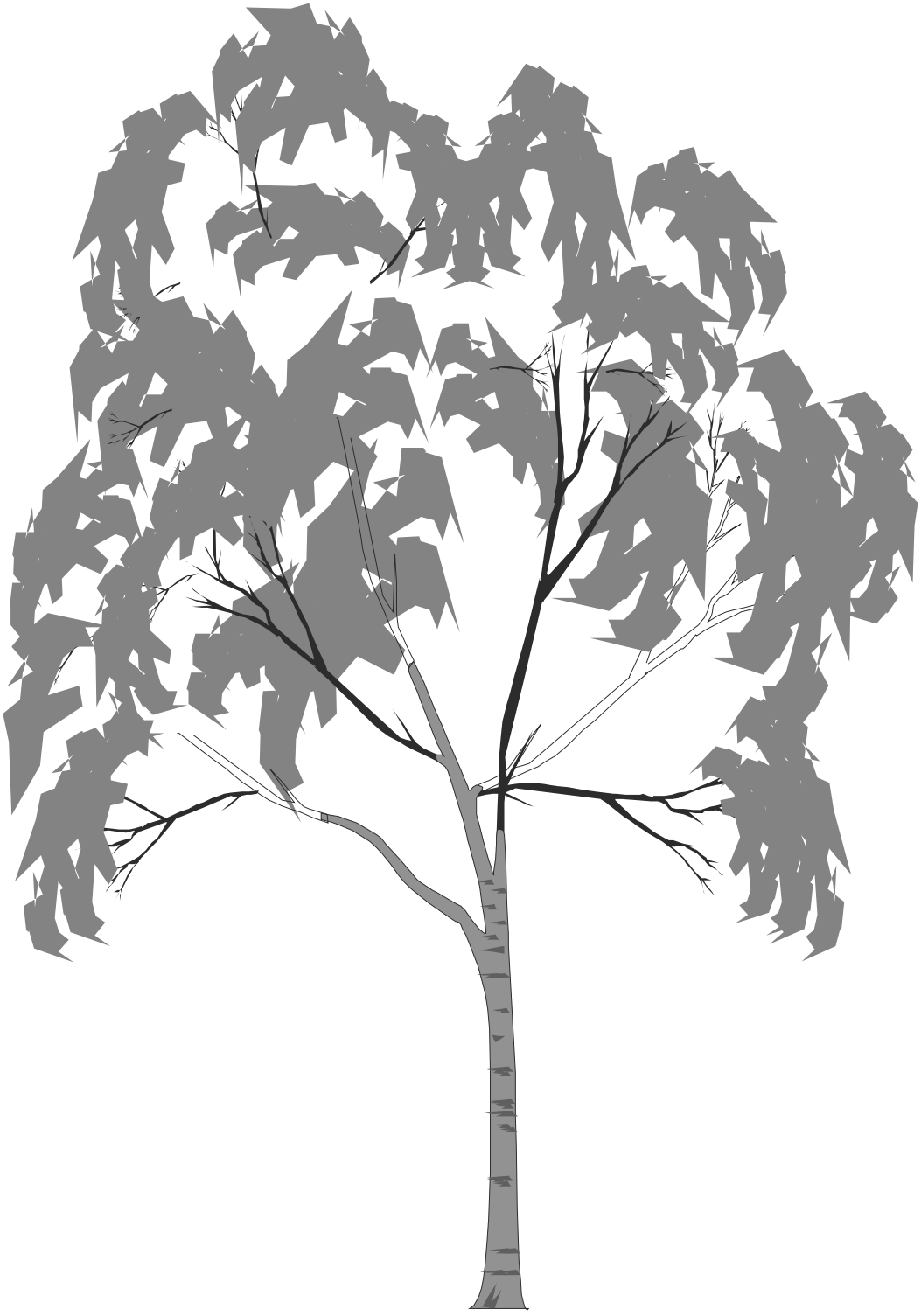
Barbie									
Spiderman									
20.Men									
Women									
Hospital									
Danger									
Exit									
Concept…	Method...	Instructions	1	2	3	4	5	Total	%
21. Alphabet knowledge: expressive task:	Name the letter represented on the card. Use letters representing the letters in the subjects name and randomly select others (Justice and Ezell, 2002):	*What's this?* Ke eng?							
	1.								
	2.								
	3.								
	4.								
	5.								
	6.								
	7.								
	8.								
	9.								

	10.								
22. Alphabet knowledge: receptive task:	Put 10 cards in 2 rows of five, ask the subject to point to letter that is called.	Show me… Mpontšhe…							
	1. S								
	2. B								
	3. H								
	4. Y								
	5. A								
	6. T								
	7. O								
	8. L								
	9. P								
	10. E								

Appendix F



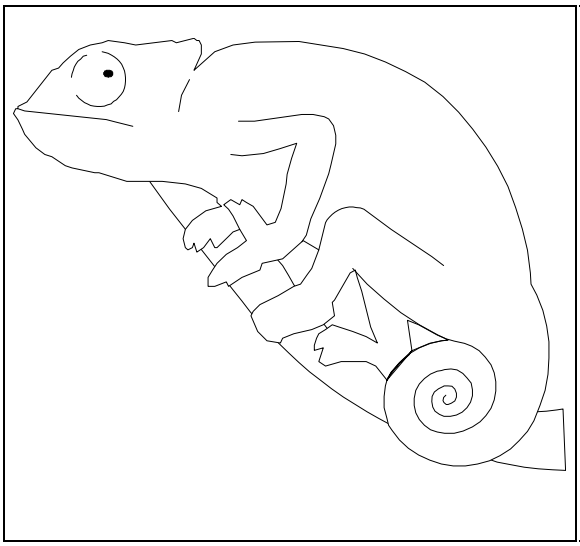
4. Top & 5. bottom

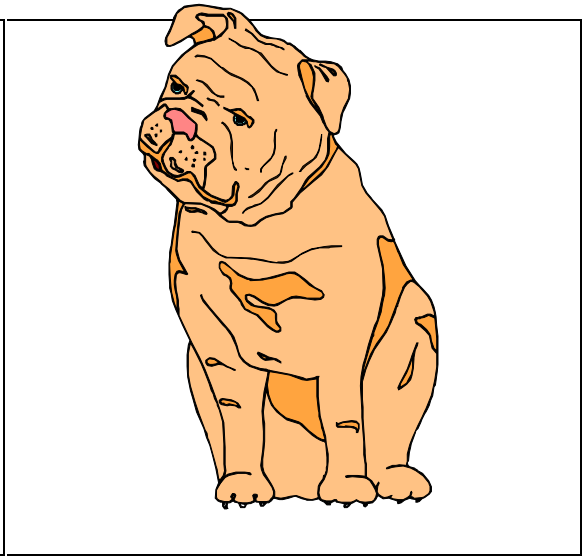


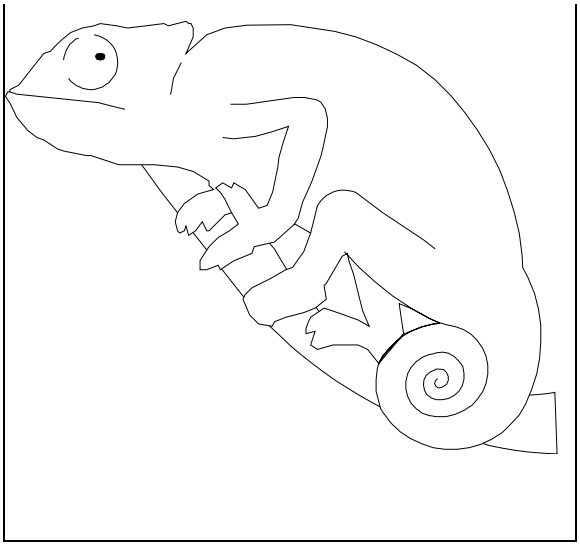
6. Begin/ Start

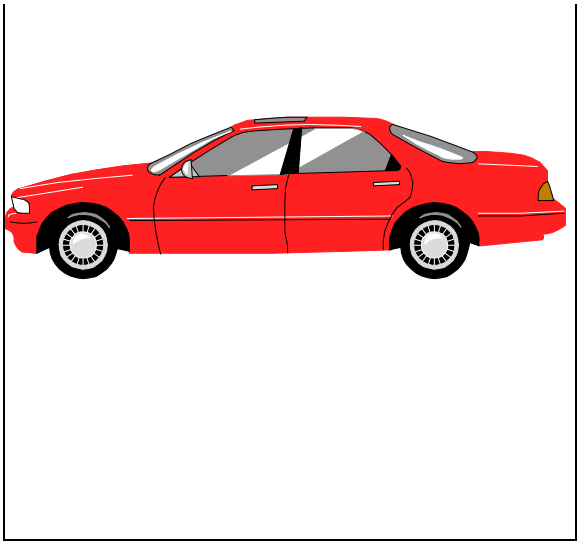
7. Longest

8. Same/ 9. different

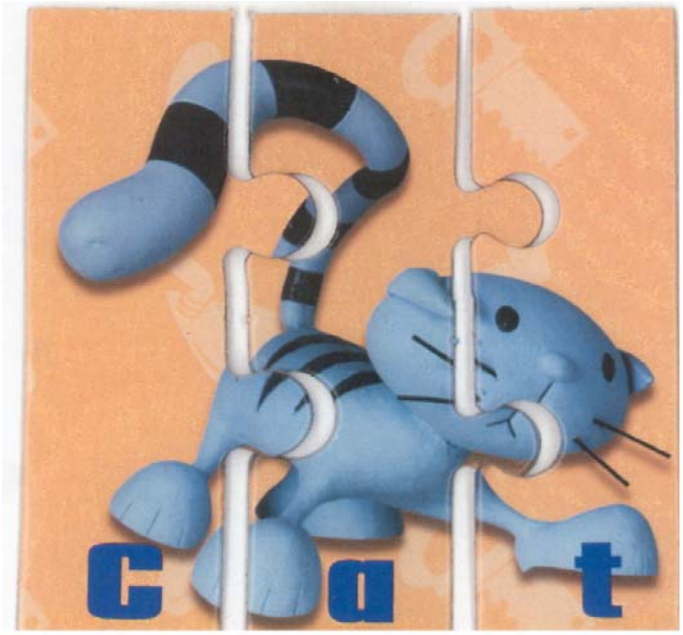




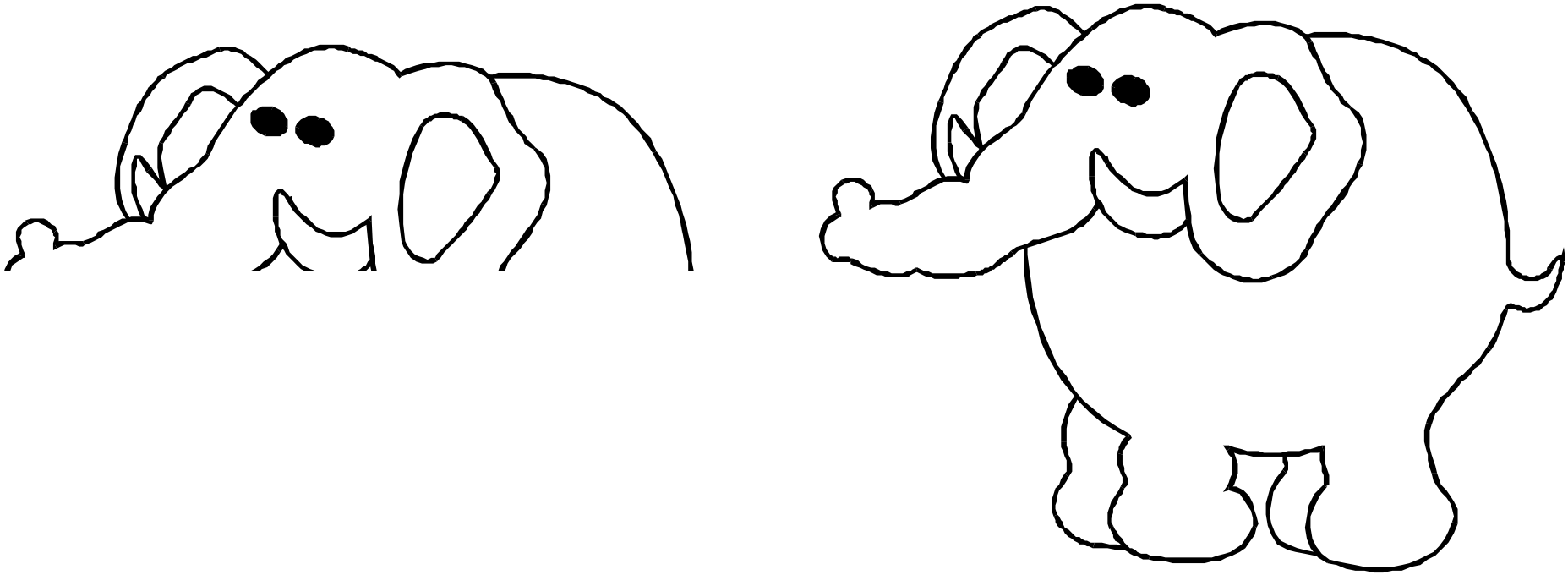




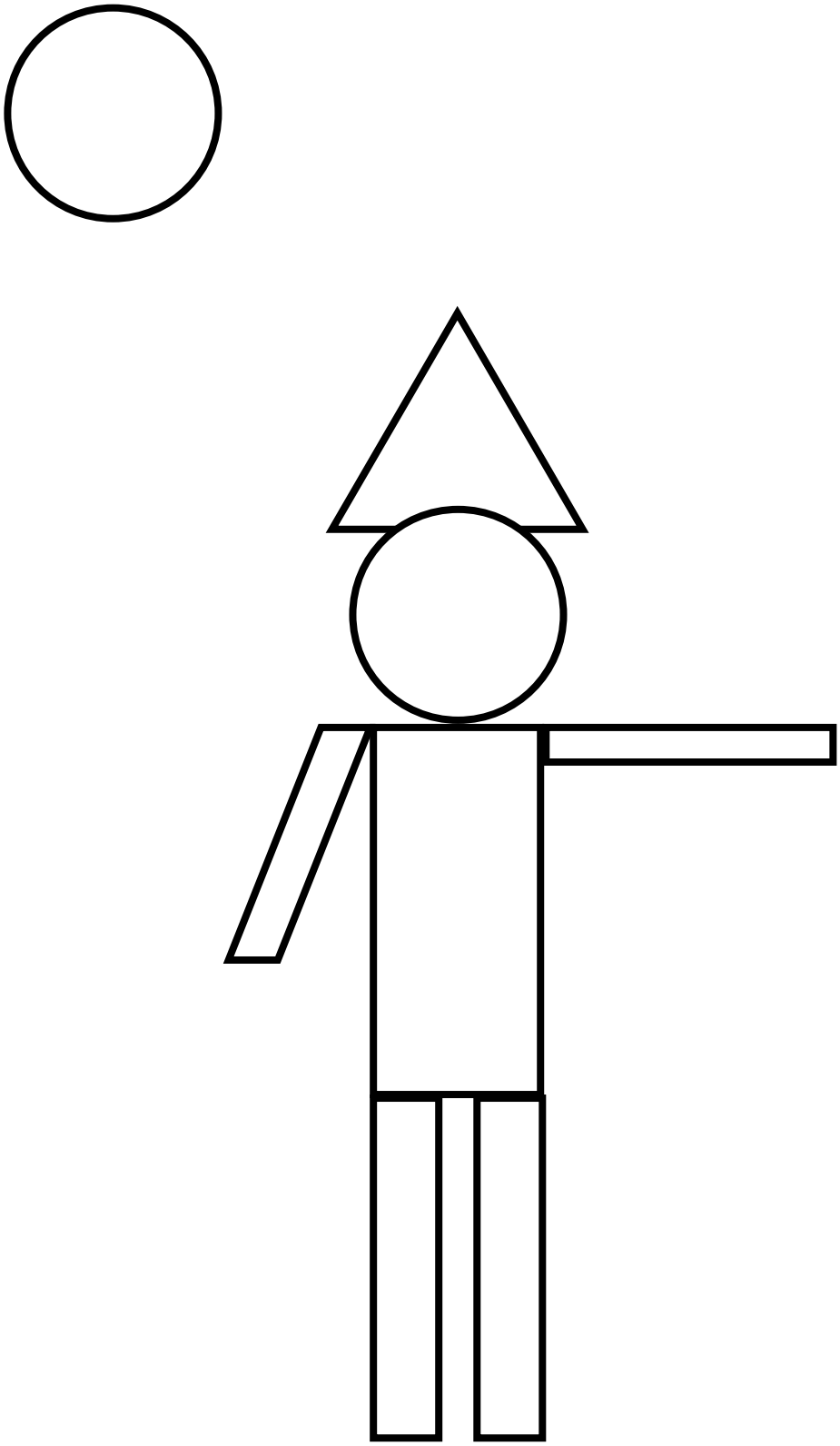
10. Parts/ Pieces



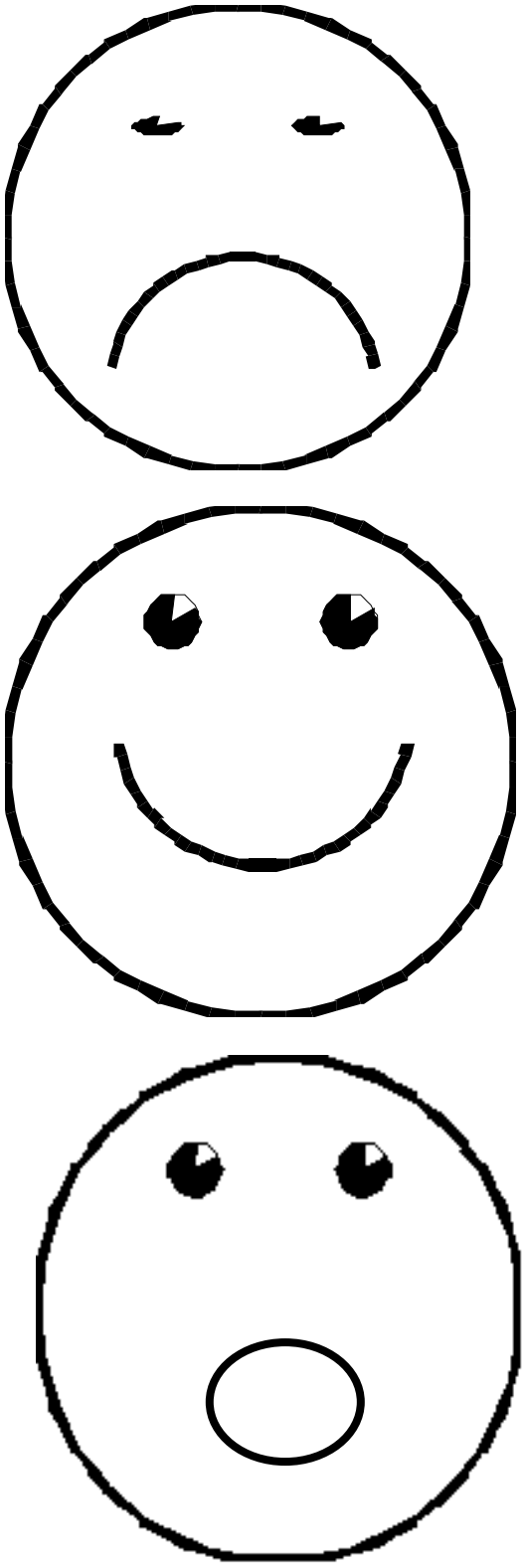
11.Whole



12. In



14. Happy/ unhappy



15.Common logos

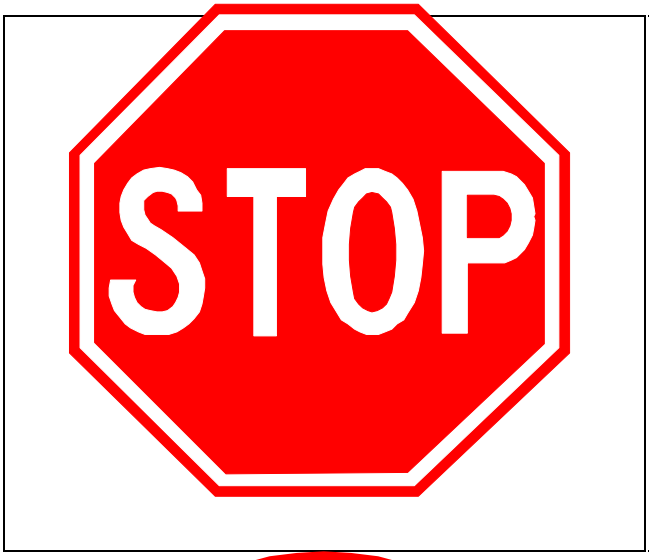
16. Generic product names

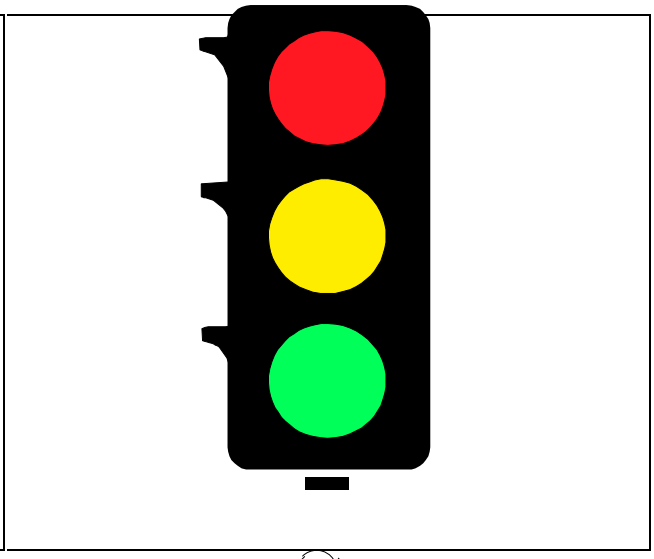
OMO™	Colgate
Zam-Buk®	KIWI
Sunlight™	

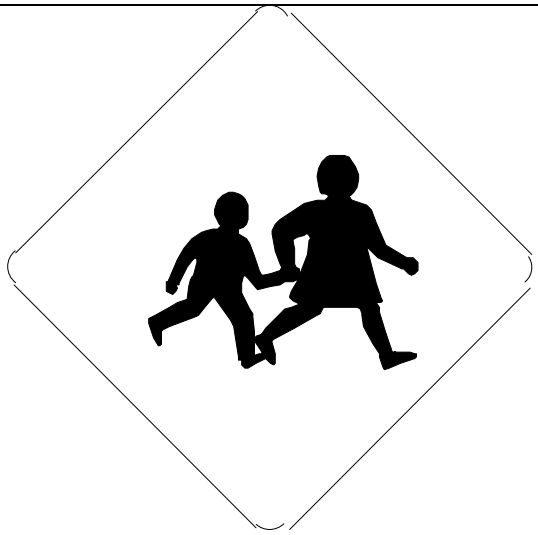
17. Food products

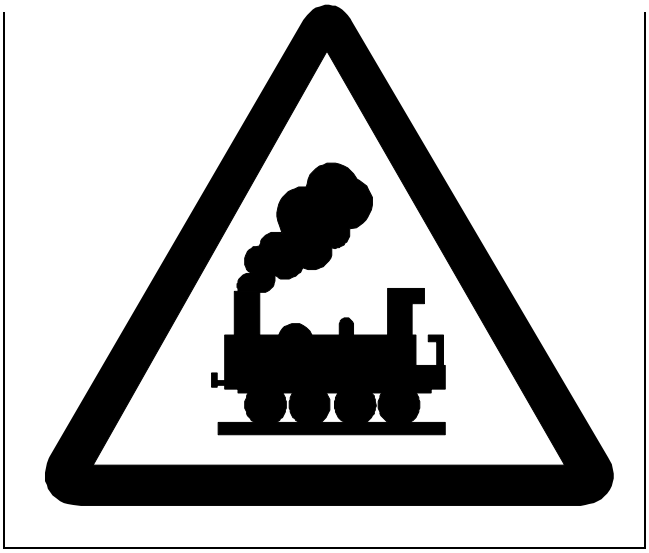
Simba	INKOMAZI® RICH AND CREAMY
Coca-Cola	LUCKY STAR PILCHARDS "HOT CHILLI SAUCE
IMPALA® MAIZE MEAL	

18. Traffic signs









19. Toy names/ logos

20. Functional labels

21. Letter name knowledge: expressive (reduced size)

a	b	c	d	e	f
g	h	i	j	k	l
m	n	o	p	q	r
s	t	u	v	w	x
y	z				

22. Letter name knowledge: receptive (reduced size)

1 s	2 b	3 h	4. y	5. a
6. t	7. o	8. l	9. p	10. e

Appendix G

Number: _____

Name: _____

DOB: _____

Gender:	Male		Female		
Academic performance	Under	Average	Above		
Mother:	None	Primary	Grade 8	Matric	Tertiaty

1. WRITTEN LANGUAGE AWARENESS:

1.1 Knowledge of print and book reading conventions

Material: Book
Scoring: Correct response = 1 point, incorrect response = 0 points.
Procedure: *Hand the book to the child, wrong side up. Child handles the book during shared book reading.*

Instructions		Items:	Scoring:	
English:	Sepedi (Northern Sotho)		0 (X)	1 (✔)
We are going to read a story together. Where is the …	Re ile go bala nonwane ka moka. *E kae…?*			
Front of the book	Ka pele ga puku	*Front of the book*		
Name of the story	*Leina la nonwane*	*Name of the story*		
Top	*Godimo*	*Top*		
Bottom	*Fase*	*Bottom*		
Where do I begin reading the story?	*Ke thoma kae go bala nonwane?*	Beginning of sentence		
Show me the words I'm reading/ that I should read.	*Mpontšhe mantšu ao ke a balago goba ao ke swanetšego go a bala.*	Words that are read		
Show me the longest word.	*Mpontšhe lentšhu le le telele.*	Identify the longest word.		
Show me the place between words	*Mpontšhe sekgoba gare go mantšhu.*	Space between words.		
Observations:		Book right side up		
		Pages turned 1 at a		

		time		
		Pages turned front to back.		
		Finger runs from left to right.		
		TOTAL:		

2. NARRATIVE ABILITIES:

Material: A familiar book

Scoring: According to the points allocated to specific level.

Procedure:

Hand the child a familiar book and ask the child to "read" the book. Everything that is said by the child is translated and written down. The stage most representative of the child's narrative abilities is identified and scored accordingly. Although overlapping may occur, the stage most representative should be identified.

Instructions:

Please read the story to me.	*Ke kgopela gore o mpalele nonwane.*

Notes:"

Descriptive checklist:	Scoring	
	Stage	Points
Labels pictures, no story is formulated		1
Describes pictures although action is present		2
Creates narrative to match an illustration but is not a story.		3
Produces dialogue linking pictures but does not form a "whole story".		4
Produces a story different from the actual text,		5

but follows conventions of a story.		
Produces a story very similar to text although not verbatim.		6
"reads" memorized text.		7
Reads independently		8
TOTAL:		

1.2 Discrimination of written representations of different written language units

1.2.1 Discrimination of literacy terms

Material: Set of cards depicting four options
Scoring: Correct response = 1 point, incorrect response = 0 points.
Procedure: *Present cards one by one. Ask child to identify the target items.*

Instructions		Scoring:	
English:	Sepedi (Northern Sotho)	0 (X)	1 (✔)
Show me	Supa/ Mpont*šhe*		
1 One word	*1 Lentšhu le tee*		
2. Letter	*2 Hlaka*		
3. Number	*3 Nomoro*		
4. Sentence	*4 Lefoko*		
5. Reading	*5 Bala*		
6. Writing	*6 Ngwala*		
7. Capital letter	*7 Hlakakgolo*		
8. Lower case letter	*8 Hlaka e nyenyane*		
9. Question mark	*9 Potšišo*		
10. Print	*10 Mongwalo*		
	TOTAL:		

1.2.2 Letter orientation and discrimination:

Material: Set of cards depicting a target phoneme over four alternatives (10 cards assess orientation and 10 assess discrimination).
Scoring: Correct response = 1 point, incorrect response = 0 points.
Procedure: *Present cards one by one. The subject is shown the target phoneme and is asked to choose the correct one form the four alternatives.*

Instructions		Items:	Scoring:	
English:	*Sepedi (Northern Sotho)*		0 (X)	1 (✔)
<u>Orientation:</u> Show me the one that is the same	*Mpontšhe leo le swanago*	1. s		
		2. e		
		3. d		
		4. w		
		5. t		
		6. r		

		7. a		
		8. y		
		9. f		
		10. g		
Discrimination: Show me the one that is the same	*Mpontšhe leo le swanago*	11. b		
		12. m		
		13. d		
		14. o		
		15. s		
		16. k		
		17. v		
		18. r		
		19. h		
		20. i		
		TOTAL:		

1.3 Situation-dependant print:

Material: Set of cards depicting logos, signs and pictures and white board.

Scoring: Correct response Identification = 2points, recognition = 1 point, incorrect response = 0 points.

Procedure: *Present cards representing a specific category together. Ask child to identify the target items. If subject is not able to identify, check recognition, e.g. can you shoe me colgate/ toothpaste?*

		Identification:		Recognition:	
		What is this?		Can you show me?	
		Ke eng se?		*O ka mpontsha:*	
Category:	Items:	2 (✔)	0 (X)	1 (✔)	0 (X)
Own name	Own name and two foils				
Common logos	Telkom				
	Police				
	Cell C				
Generic product names	OMO				
	Zambuk				
	Kiwi shoe polish				
Food products	Simba				
	Coke				
	Pilchards				
Traffic signs	Stop				
	Traffic light				
	Speed limit sign				
Toy names/ logos	Dragonballz				
	Barney				

	Sesame street				
Functional labels	Man				
	Hospital/ ambulance				
	EXIT				
Names/ logos of high personal interest	School name				
	Teacher's name				
	Town name				

1.4 Productions of written language:

Material: paper and pencil
Scoring: Stages of Children's Productions of Written Language from the preschool Literacy Assessment as compiled by Edmiaston (1988).
Procedure: Child is presented with a piece of paper and pen, asked to write something and then asked to "read" what was written. The stage of development is then determined. Although overlapping may occur, the stage that is most representative of overall performance should be identified.
Instructions:

Please write something on the paper.	*Ngwala se sengwe mo letlakaleng*.
Now, please read it to me.	*Mpalele seo o se ngwadilego.*

Stages of productions of written language	Description:	Scoring	Points
Proto-writing	Scribbling: not pictures, but not yet conventional representations of words		1
Letters and letter-like shapes			2
Invented spelling (i) Pre-phonemic	▪ Unaware of phonemic nature. ▪ Apparent random letters.		3
(ii) Early phonemic	▪ Aware of phonemic nature of written language ▪ Typically initial, last or most prominent sound, ▪ Can sometimes be read, ▪ If child feels a word needs more letters he might add a random string of letters to complete word, ▪ Not yet readers of situation independent print.		4
(iii) Letter-name	▪ Selects letters based on the letter-name-to-sound match ▪ Usually only initial or ending consonants are used to represent words ▪ Begin to divide words into phonemes ▪ Left to right sequence begins to stabilize.		5
(iv) Transitional	▪ Spelling starts to reflect conventional spelling ▪ Can be read by others		6
(v) Conventional	▪ Standard spelling		7
Groups of words/ single sentences			8
Two or more sentences			9
Narratives: stories, letters, etc			10

3. PHONOLOGICAL AWARENESS:

3.1 Alliteration detection:

Material: 4 stimuli cards

Scoring: 1 point for every correct answer

Procedure: Three words are presented to the child, of which two of the words have the same initial sound phoneme. The child is asked to identify the word that differs from the rest (Gilbertson and Bramlett, 1998; Burt *et al.,* 1999; Larrivee and Catts, 1999). Introduction to the task is done by directing the participant's attention to the initial sound in his/ her own name and by providing an example of another name with the same initial phoneme. One practice item with stimuli pictures is then used to further familiarize the child with the task. Ten items were administered and one point awarded for each correct response.

English:	***Sepedi:***
This was done in the following way: "Your name _____ (*say the child's name)* starts with a ____sound (*produce the sound, not the letter name).*	*Leina le gago _____ (say the child's name) le thoma ka ____sound (produce the sound, not the letter name).*
I know other names that start with the ____sound (*produce the sound and give three examples).* The practice item was then introduced with the following phrase:	*Ke tseba maina a mangwe a a thomago ____sound (produce the sound and give three examples).* The practice item was then introduced with the following phrase:
"I'm going to say some words to you. Three of the words start with the same sound, but one doesn't.	*Ke ile go bolela mantšu. A mararo a thoma ka modumo wa go swana eupša le le tee ga le swane le ona.*
Can you tell me which one is different/ doesn't belong?" Stimulus pictures were then provided and the examiner pointed to each picture while simultaneously naming them. Attention is focused on initial phonemes with the following phrase:	*O ka mpotša gore ke lefe leo le sa swanego le ona.* Stimulus pictures were then provided and the examiner pointed to each picture while simultaneously naming them. Attention is focused on initial phonemes with the following phrase:
"meetse starts with m, mpsha starts with m, monna starts with m.	*"meetse le thoma ka m, mpša le thoma ka m, monna le thoma ka m.*
They all start with m, except for katze, that starts with k, so it doesn't belong".	*Ka moka a thoma ka m, ka ntle le katse, yona e thoma ka k, go e sepelelane le ona.*

Assessment items:

	Stimuli:			Scoring:✓
1.	Baba (bitter)	Bosasa (tomorrow)	Selemo (summer)	
2	Goga (pull)	Lesome (ten)	Labone (Thursday)	
3	Holo (hall)	Bosasa (tomorrow)	Hotele (hotel)	
4	Moriri (hair)	Noto (glue)	Molala (neck)	
5	Kala (branch)	Kutu (stem)	Garafo (spade)	
6	Namane (calf)	Dinawa (beans)	Diterebe (grapes)	
7	Pula (rain)	Pelo (heart)	Bora (drill)	

8	Rata (love)	Motato (wire)	Rakgadi (aunt)	
9	Tau (lion)	Tee (one)	Naledi (star)	
10	Pere (horse)	Sefako (hail)	Serapa (garden)	
			TOTAL	

3.2 Production: word with target phoneme
Material: none
Scoring: 1 point for every correct answer
Procedure: The participant is requested to produce a word beginning with a specific phoneme (tell me a word that starts with m).
Instructions:

Eg sammy starts with [s].	_____ *(name) le thoma ka ____.*
Can you tell me a word that starts with :	*O ka mpotša lentšu leo le thomago ka..*

Target phoneme	Response:	Scoring:
S		
M		
L		
K		
P		
	TOTAL:	

3.3 Analysis:
Material: Picture of pick, shelf.
Scoring: 1 point for every correct answer
Procedure: Participant is requested to segment a word into its constituent phoneme/ letters/ pieces.
Instructions:

I can break a word into pieces. For example, I can say pick like this p-i-ck. Can you do the same with shelf ?	*Nka kgaogantšha lentšu, mohlala peke nkana ka re p-e-k-e. O ka dira ka raka…*

Stimuli:	***Answer:***	***Scoring***
Tee	t-ee	
Tau	t-au	
Ema	e-m-a	
Pese:	p-e-s-e	
Agee	a-g-ee	
	TOTAL:	

3.4 Phoneme count:
Material: Tokens, picture of girl
Scoring: 1 point for every correct answer
Procedure: The participant is requested to identify the number of phonemes in a target word by putting down a token to represent each phoneme.

Instructions:

This girl's name is Thoko. Listen: th-o-k-o. I am going to put down one block for	*Leina la mosetsana ke Tkoko. Theeletsa: th-o-k-o. Ke tlile go tloša*

every sound I hear. Th=o=k=o. Let's see if you can do it with your name. Good, now let's do the same with these words:"	*kgaolo e tee mo modumong o mongwe le o mongwe o le o kwago. Th-o-k-o. Ke nyaka go bona gore o ka dira ka leina la gago.* *Gabotse, a re direng ka go swana ka mantšu a:*

Stimuli:	No of phonemes/ blocks/ claps	Scoring:
Aka (kiss, fondle, lie)	3	
Fa (here)	2	
Katse (cat)	5	
Masa (daybreak)	4	
Nko (nose)	3	
	TOTAL:	

4. LETTER NAME KNOWLEDGE:

4.1 Alphabet knowledge:

Material: alphabet cards
Scoring: 1 point for every correct answer
Procedure: Expressive task: present 10 cards and ask the child the name of the letter. Choose cards to represent the letters in the first names of the participants and make up the total by randomly selecting other cards (Justice and Ezell, 2002). Let the child take one at a time and name the card.
Instructions:

This is a B. Take one. What is this?	**Ke B.** **Tsea one/ tee. Ke eng…?**

Letters selected	Scoring:
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
TOTAL:	

4.2 Recite the alphabet:

Can you say the alphabet?	O ka bolela alfabete?

Able	Unable

1	0

TOTAL:

Notes:

4.3 Rapid letter naming:

Material: phoneme flashcards

Scoring: 1 point for every correct answer

Procedure: A chart/ flashcards with all the letters of the alphabet are presented to the participant, who is requested to name the letters as fast as possible. Letters/ graphemes were not presented in alphabetical order to ensure that naming ability was assessed and not the ability to recite the alphabet. One point was awarded for each correct answer. Wrong responses were written down.

Instructions:

I am going to show you letters. Can you tell me what their names are as fast as you can? For example, this one is called [bee] {for [b], give alphabetic letter name)}.	Ke tlile go le bontsha ditlhaka. O ka mpotša maina a tšona? Mohlala: Ye e bitswa (bee, give alphabetic letter name) (Show B)

Letter	Incorrect response	Scoring	
		0 (X)	1 (✔)
1.b			
2.n			
3.x			
4.f			
5.q			
6.j			
7.r			
8.o			
9.g			
10.w			
11.e			
12.y			
13.k			
	Sub Total:		

Letter	Incorrect response	Scoring	
		0 (X)	1 (✔)
14.	s		
15.	c		
16	u		
17.	h		
18.	z		
19.	p		
20.	t		
21.	i		
22.	m		
23.	a		
24.	v		
25.	l		
26.	d		
	Sub Total		
	Subtotal c/o		
TOTAL			

5. GRAPHEME-PHONEME CORRESPONDENCE:

Material: Letter cards

Scoring: 1 point for every correct answer
Procedure: The child is shown the alphabet letter and asked to produce the sound that goes with the letter. Ten cards are presented. One point was awarded for each correct answer.
Instructions:

This is K (use alphabet name). This letter makes the [k] (produce sound) sound that we hear in katze. This is the A (use alphabet name). A stands for [a] (produce sound) that we hear in apola. Let see if you can tell me what sound this letter stands for: [s] (produce sound). Very good, now tell me, what sound does this one stand for?	E ke [k]. Hlaka e e dira {k} modumo yo re o kwago ke katse. E ke A e emetse hlaka e [a] re e kwa ge re re apola. A re kweng go re hloka tse di dira modumo ofe: [s]. O bohlala, bjale mpotse modumo wa tse latelago gore o emetseng?

Phoneme	Incorrect response	Scoring	
		0 (X)	1 (✔)
1. S			
2. L			
3. P			
4. M			
5. T			
6. O			
7. F			
8. I			
9. R			
10. B			
	TOTAL:		

6. LITERACY MOTIVATION

6.1 **Material:** Pictures of literacy events (children reading and writing), pictures that show a happy and a sad face.
Scoring: 1 point for indicating happy, no points for indicating sad.
Procedure: The child was shown pictures of literary events and was requested whether he was happy or sad by pointing to a smiling face or a frowned face. The emotions associated with the frowned and smiling face were first discussed.
Instructions:

This face is happy, do you see his smile? This face is unhappy, he is not smiling. Do you see this child? She is writing. Is she happy (point to the happy picture) or sad (point to the unhappy picture). Do you see this child? He is reading. Is he happy (point to the happy picture) or	*O bona ngwana*? *O a ngwala*. *O bona gore o thabile* (point to the happy picture) *goba o nyamile?* (point to the unhappy picture).

sad (point to the unhappy picture).	

Child indicates:

Picture 1	Happy	1	Sad/ unhappy	0
Picture 2	Happy	1	Sad/ unhappy	0
			TOTAL:	

6.2 Material: None

Scoring: 5-point scale, 1 refers to low engagement, 5 to high engagement level.

Procedure: Child is observed while busy with a variety of literacy tasks and his/ her level of engagement is described on a continuum from no/ low engagement to high engagement level. This was observed during the assessment procedure and checked with the educator.

Engagement level in literacy tasks:

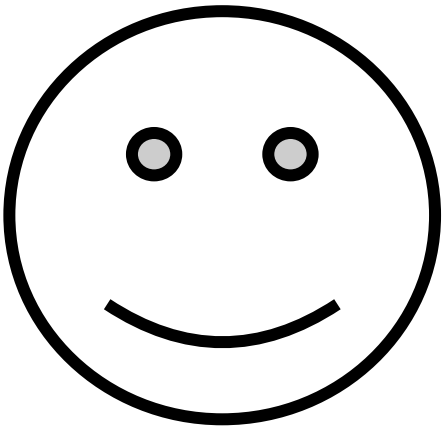
1	**2**	**3**	**4**	**5**
Low	Below average	Average	Above average	High engagement

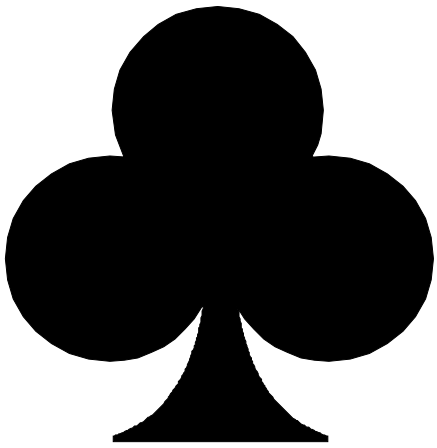
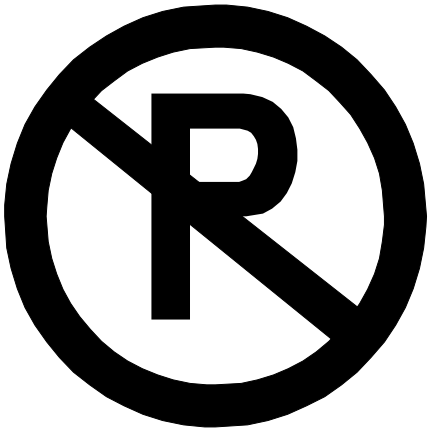
TOTAL:	

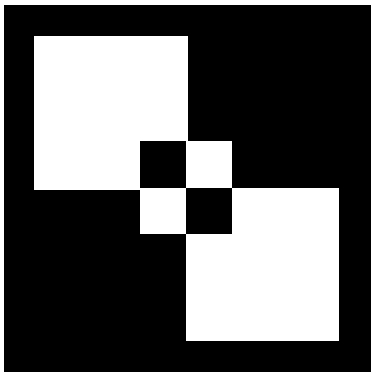
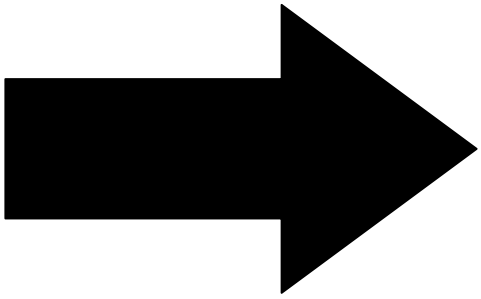
Notes:"

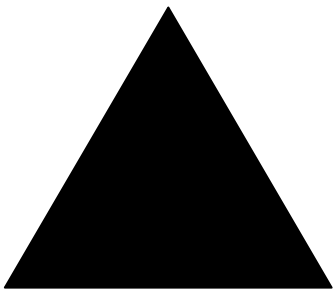
Appendix H

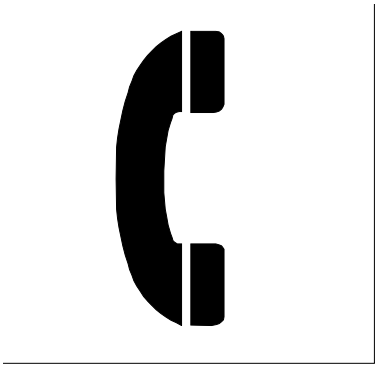
Written language awareness: 1.2.1 Discrimination of literacy terms

up	1 =
	D
m	2 7
	I saw a big house

	3 4
Generations	+
	4 W
taxi	Spot baked a cake

1 + 1 = 2	5 
!	+
word	6 
	My name is

	7 ✳
B	10
t	8 %
sentence	

?	9 
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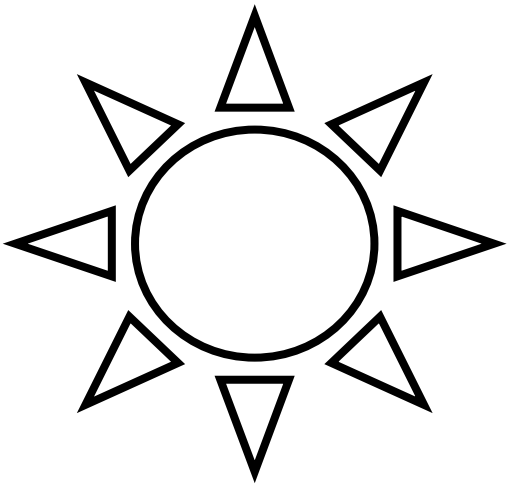
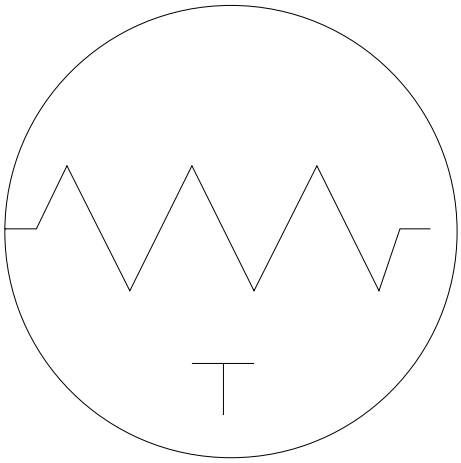
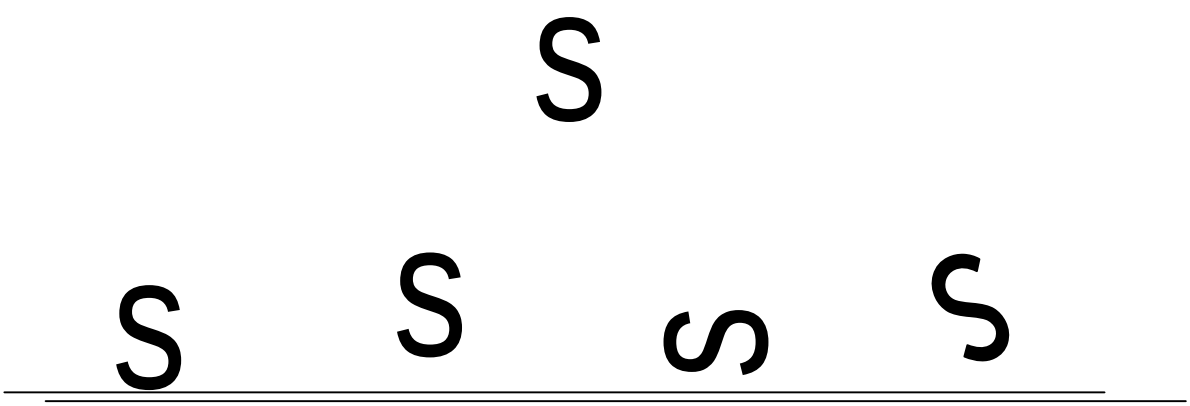
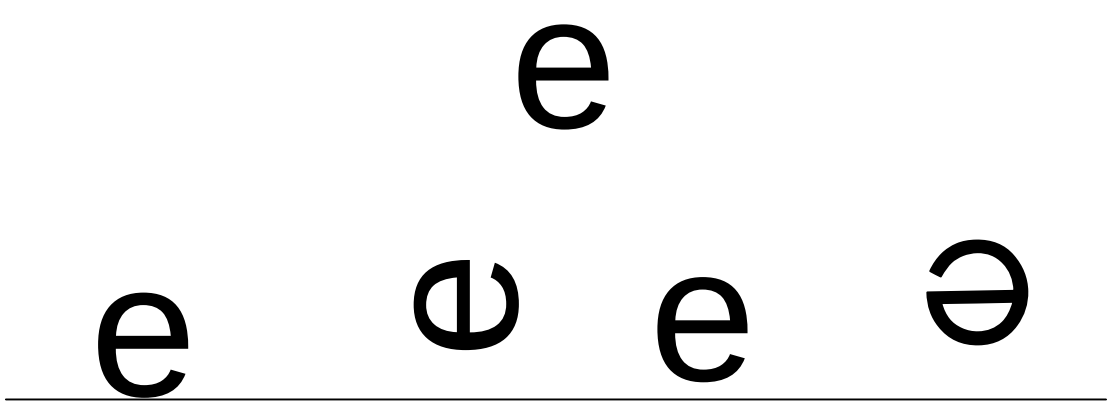
	10 
	*During the first fifteen days of the month, we should be finishing up our fall pruning. In most cases, especially for modern roses, this is light pruning. Usually no more than 1/4 to 1/3 of the bush should be removed for fall pruning. Start by cutting out dead canes, spindly stems, crossing stems and blind shoots. The objective is to cut back to a pencil size stem, particularly for hybrid teas, which is what is needed to support a good bloom During the summer, as growth slows and is weaker, the bushes form "candelabras" or a multiple of many thin stems at the top of the bush.*

1.2.2 Letter orientation & discrimination

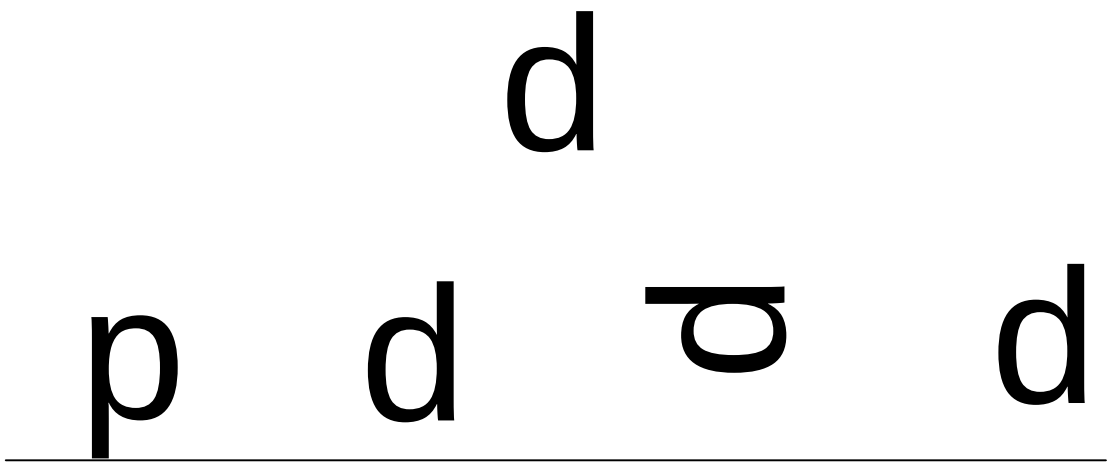
Orientation 1



Orientation2

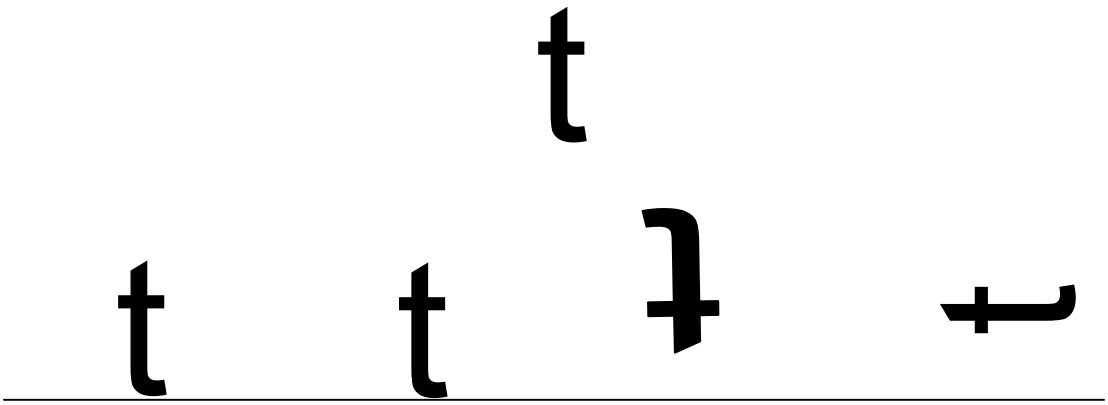


Orientation 3

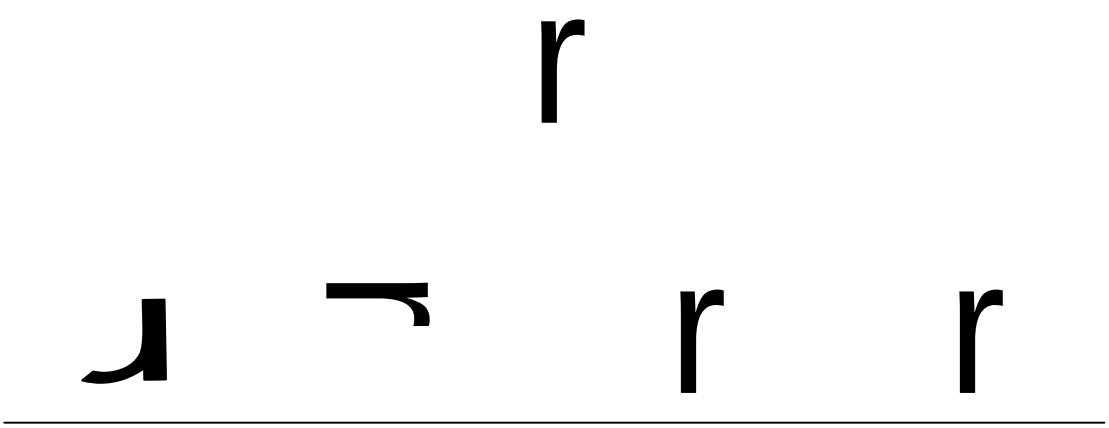


Orientation 4

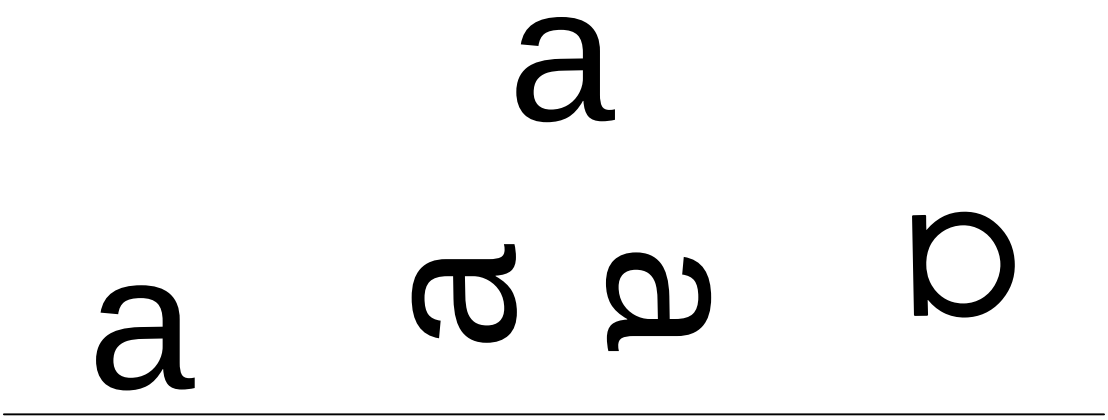
Orientation 5



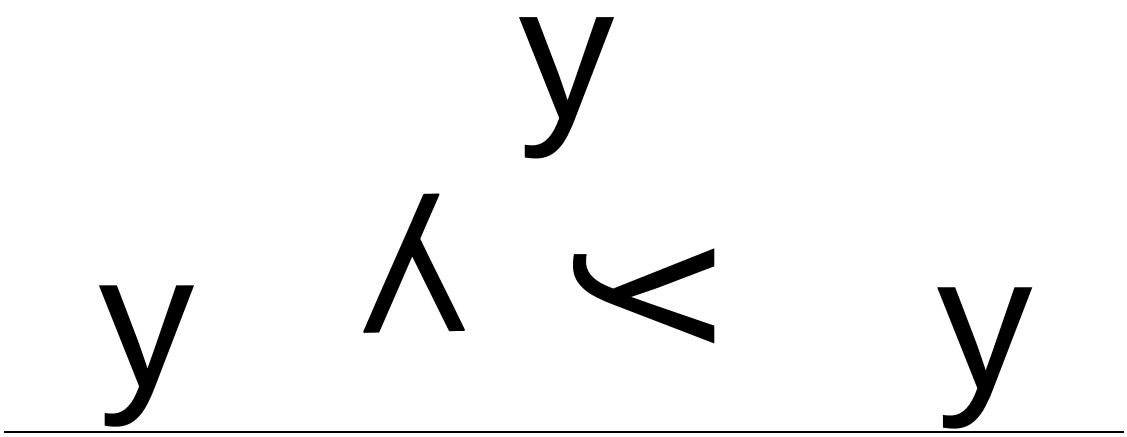
Orientation 6



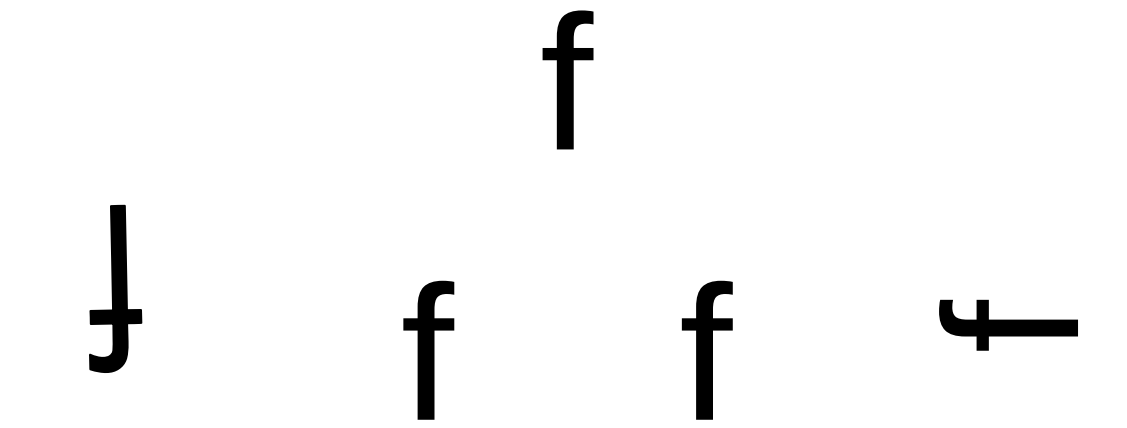
Orientation 7



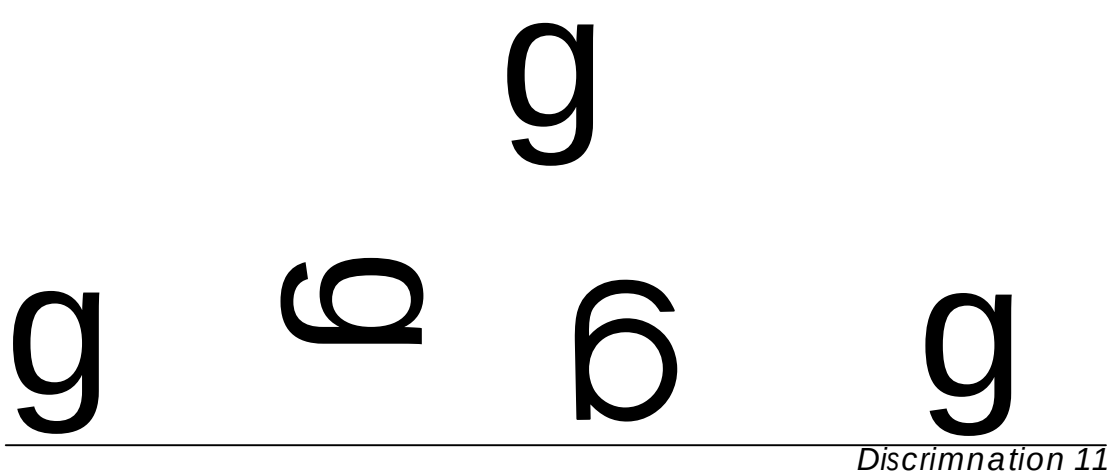
Orientation 8



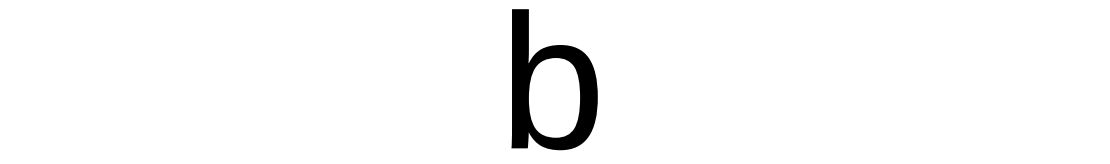
Orientation 9



Orientation 10



Discrimnation 11



b p l n

Discrimnation 12

m

u n h m

Discrimnation 13

d

p b a d

Discrimnation 14

o

o c a Q

Discrimnation 15

s

f g s z

Discrimnation 16

k

l k f x

Discrimnation 17

v

v y w u

Discrimnation 18

r

l m r n

Discrimnation 19

h

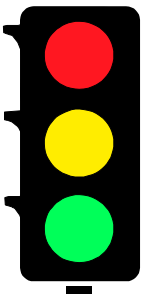
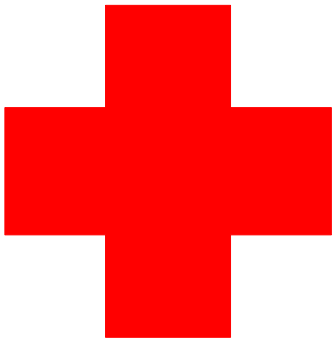
h n u m

Discrimnation 20

i

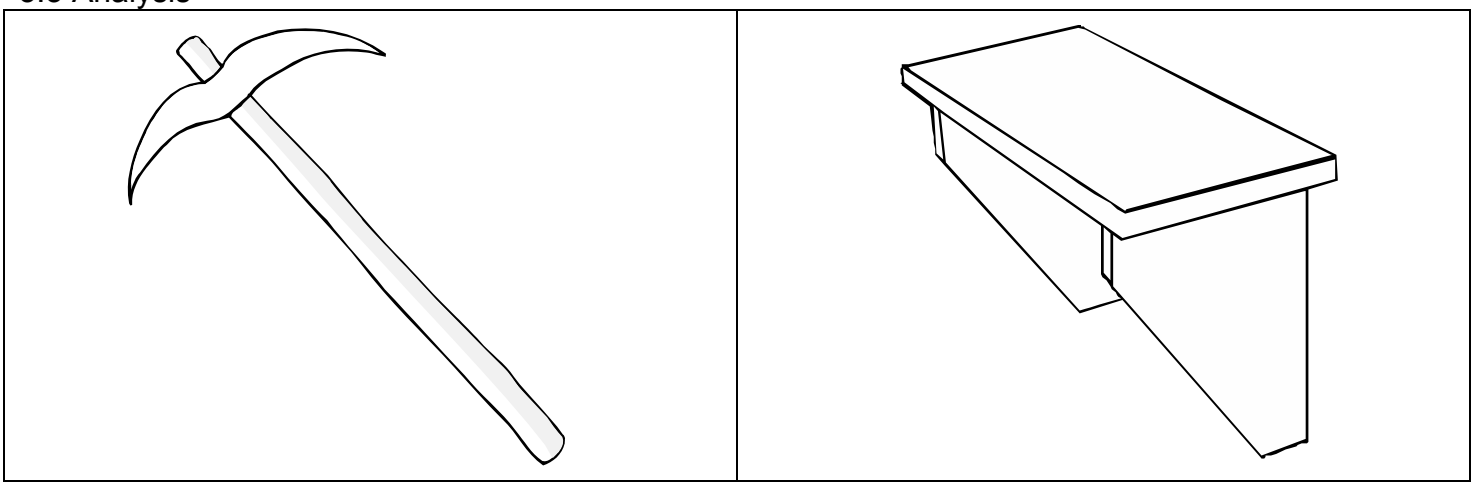
i L j t

1.3 Situation dependent print

 STOP	 70
	 DRAGON BALL Z
 Barney	 123 SESAME STREET
	
 EXIT	

3.1 Alliteration detection:

3.3 Analysis



3.4 Phoneme count

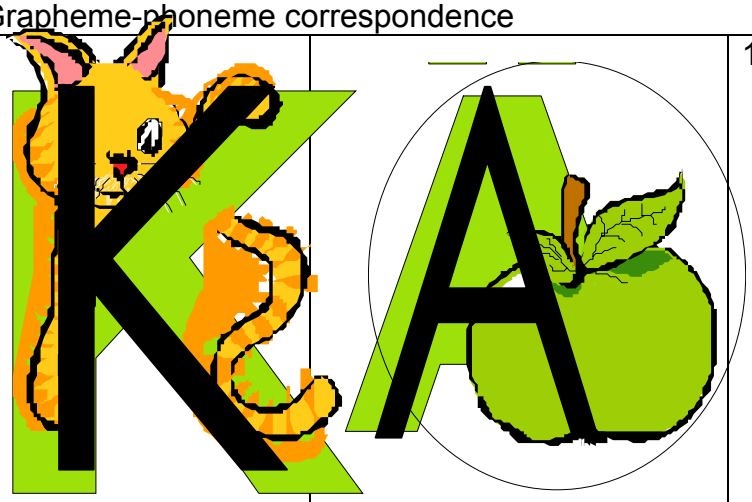
4.1 Letter name knowledge: expressive (reduced size)

a	b	c	d	e	f
g	h	i	j	k	l
m	n	o	p	q	r
s	t	u	v	w	x
y	z				

4.3 Rapid letter naming (reduced size)

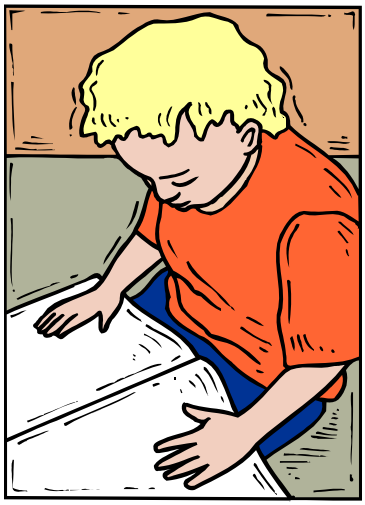
1. b	2. n	3. x	4. f	5 q	6. j
7 r	8 o	9. g	10. w	11. e	12. y
13. k	14. s	15. c	16. u	17. h	18. z
19. p	20. t	21. l	22. m	23. a	24. v
25. i	26. d				

5. Grapheme-phoneme correspondence

		1. s
2. l	3. p	4. m
5 t	6 o	7 f

8	9	10.
i	r	b

6.Literacy motivation



Appendix I

University of Pretoria

Research Proposal and Ethics Committee
Faculty of Humanities

13 September 2004

Dear Mrs Naudé

Project:	***The development of early literacy skills among a group of urban Sepedi-speaking children***
Researcher:	**H Schutte**
Supervisor:	**E Naudé**
Department:	**Psychology**
Reference number:	**9148760**

Thank you for your positive response to the requests by the Research Proposal and Ethics Committee, Faculty of Humanities dated 4 August 2004.

I have pleasure in informing you that the Research Proposal and Ethics Committee formally approved the above study at an *ad hoc* meeting held on 10 September 2004.

The committee requests you to convey this approval to Ms Schutte.

We wish you success with the project.

Sincerely

B Louw

Prof Brenda Louw
Chair: Research Proposal and Ethics Committee
Faculty of Humanities
UNIVERSITY OF PRETORIA