
Turning the tide on illiteracy: a search for early childhood language stimulation among Free State pre-schoolers

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Abstract

One of the most significant educational accomplishments in a literate society is learning to read and write. Social-constructivist theorists emphasise the mediating role of language in the process of knowledge construction during the social interaction of children¹ with more capable peers, adults and educators. This theoretical account confirms recent longitudinal findings that significant relationships exist between quality early childcare learning environments and academic performance in the primary school. Moreover, evidence abounds of direct links between quality language input in early childhood education and emergent literacy skills development and the stability of literacy, social and behavioural skills throughout childhood and adolescence. Against a backdrop of recent literacy statistics obtained from the Annual National Assessments (2011) of South Africa, which indicate a downward trend in literacy achievement for the majority of children, it is critical to gain an understanding of teacher practices and the quality of early childhood language input currently being offered in early childhood education. Despite numerous efforts to increase the literacy level of primary school children, it does seem that early literacy is still lacking in the majority of children who enter the formal school environment. For instance, in the Free State province only a third of Grade 3 children achieved the basic literacy outcomes in 2011. A collaborative effort is thus in the process of being undertaken to assess the quality of early childhood language stimulation programmes being offered at randomly selected Grade R-classes in the Province. The study involves a research team comprising six members, 107 educators and 3657 Grade R children. This longitudinal, community-based research project is in three phases: *Phase One* (2009–2010) the pilot project was launched; *Phase Two* (2011) has been replicated but with a more representative sample of classes and early childhood centres, including in-depth and focus-group interviews with a representative sample of Grade R educators; and *Phase Three* (2012–2014), in which identified needs of Grade R educators will be addressed through workshops and in-service training opportunities.

Embedded in the broader theoretical framework of ecological systems theory, the first phase also considered the impact of various teacher and classroom variables on the language outcomes of pre-school children. These included school demarcation, socio-

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The term *children* is used throughout the article, in preference to *learners*.

economic status, school fees, educator-child ratio, language of teaching and learning (LOLT), and educators' training and experience. Data was gathered through multiple methods of the administration of the *Early Childhood Environment Rating Scale (ECERS-R)*, classroom observations, recording field notes and informal discussions with the Grade R educators. Important findings are that the quality of language input varied significantly across different educational settings in rural and urban areas of the province, though Grade R classes in urban areas are much better equipped and teaching practices to support language development more advanced. Major concerns that impact negatively on the language-related experience of pre-school children were socio-economic and financial constraints; the majority of children not having access to books and other support material; over-crowded classes and how these affect quality teaching and learning; both teachers and children being disadvantaged because of LOLT policies in some of the schools; and authoritarian teaching styles. The results not only confirm those of previous South African studies, that the quality of language stimulation programmes need urgent attention, but also provide the basis for a radical re-think by policymakers and stakeholders in education on the entire provision of pre-schooling.

Introduction

There is a long-held acceptance of the importance of stimulating learning opportunities with regard to the healthy development and the physical, emotional, social and academic well-being of children (Fontaine, Torre, Grafwallner and Underhill, 2006). Research (see Booth, 2002; National Institute of Child Health and Human Development Early Child Care Research Network, 2005) substantiates the critical role of the environment for optimal child development, especially in the early years. This understanding has expanded to include the critical nature of early childcare, acknowledging the special role of the pre-school education centre (kindergarten) in creating an adequate and appropriate environment for the active facilitation and promotion of learning and development (Lui-Yan and Pan-Yuejuan, 2008).

Consequently, the past two decades have been characterised by renewed attention to the importance of early childhood development (ECD) policies and services in the world's wealthiest and most industrialised countries. We have also witnessed unprecedented efforts to place ECD policies on the national development agenda of economically less advantaged countries of the world, including those in Sub-Saharan Africa (Pence and Marfo, 2008). Research suggests that differences in children's early experiences play a formative role in shaping their school readiness and largely explain gaps in reading and mathematics when they start formal school (Chatterji, 2006). In particular, findings from the NICD ECCRN (2005) suggest that early comprehensive language skills are directly related to first-grade reading

competence, and that environments rich in language stimulation and conversation will build general language skills and have the positive effect of supplementing vocabulary and metalinguistic skills.

As the quality of oral language varies in homes within all strata of society, the language stimulation in any preschool setting becomes a critical factor. Preschool educators thus have the responsibility not only of developing basic social and emotional strategies, health and personal hygiene, fine and gross motor skills, and cognitive understanding, but also of introducing new expectations of interactions with peers and adults, whilst consciously developing their oral literacy and emergent literacy skills (Beauchat, Blamey and Walpole, 2009). Researchers (see De Witt, 2009; NICHD ECCRN, 2005) postulate that the quality of early child care is the number one predictor of child behaviour, and that children with significant developmental delays or bio-medical risk factors, if exposed to quality early-childcare environments, showed more appropriate adaptive behaviours, advanced cognitive development and better socialisation skills, regardless of their domestic circumstances (Booth, 2002; Fontaine *et al.*, 2006; NICHD ECCRN, 2005). Despite this however, empirical findings regarding the benefits of pre-school language and literacy curricula have demonstrated mixed results and this has raised numerous questions regarding the effectiveness of current language stimulation programmes and existing teaching practices being offered both in South Africa and abroad (De Witt, 2009; Justice, McGinty, Cabell, Kilday, Knighton and Huffman, 2010; Rentzou, 2010). This universal concern was the point of departure in this pilot study as the researchers set out to investigate if the language stimulation programmes currently being offered prepare Free State pre-schoolers adequately to cope with formal learning structures and reading and writing when they enter school.

Theoretical framework

The early years of a child's life (birth to eight years) are important for his/her physical, cognitive, social, emotional and language development (Mouza, 2005). Research on child development suggests that at this age children need opportunities to learn by doing through interacting, exploring and manipulating real-world objects (Bransford, Brown and Cocking, 2000). In exploring the quality of Grade R children's language development and reasoning the authors in the present study draw on several related theories, including the ecological systems theory (Bronfenbrenner, 1979) and the work of social-constructivist theorists such as Vygotsky (1978) and Rogoff (1990),

thus acknowledging the interrelatedness of both extrinsic and intrinsic factors that may contribute and/or hamper adequate language exposure during this important emergent literacy phase.

Bronfenbrenner's eco-systemic model (1979) presents a systems theory that helps in understanding the complex interaction between individual learners and their contexts (e.g. family, school, peer group, community), and a developmental model to understand the individual change and growth in learners over time (Donald, Lazarus and Lolwana, 2006). With regard to pre-schoolers' construction of knowledge, any of these contexts may contribute to potential language and learning problems and create barriers to language and literacy development (Pretorius and Machet, 2004). Acknowledging the interplay of family and home variables, such as poor socio-economic circumstances that influence prior knowledge and language development; impoverished language experiences at home; lack of resources such as libraries, reading material and newspapers; and lack of essential support of parents or caregivers; the present study set out to explore the quality of classroom support, especially the quality of language exposure and classroom opportunities for enhancing language skills and reasoning of Grade R children in the Free State province (Van Staden, 2011). We also considered the effect of the demarcation of the school (whether rural or urban); its socio-economic status; school fees; educator training and experience in pre-school education; the language of teaching and learning (LOLT); and the educator-child ratio. These we considered to be relevant factors in the use or misuse of time and resources to create or impede adequate language stimulation opportunities. Since these factors relate to the broader environment in which the school is situated, consideration of them also positioned the research within a framework of ecological systems theory.

In terms of the pedagogical parameters of our study, we consider critically those aspects of the social constructivists' that wish to view knowledge not as passively received and absorbed but as built up by the individual through active participation in the learning process with others from the wider community (Justice and Ezell, 2004). Thus, children are not perceived to learn in isolation but rather in the company of peers, significant others and learners from different social class backgrounds, some of whom who can support them, but others hinder them as they learn. We thus challenge the idealist interpretation of social constructivism as a panacea for counteracting traditionally competitive educational methods that are placed at the centre of the process the individual learner, in particular as it relates to pre-school stimulation of language.

Vygotsky (1978) argued that thought and language develop simultaneously and around age three or four children begin to use the language they developed for social purposes as a tool to organise their thoughts and actions. If this is true, language should be expected to facilitate problem solving and thought, with self-directed talk (inner speech) helping the child to plan and organise what he or she wants to do (see Bransford *et al.*, 2000). At the heart of Vygotsky's theory is the *zone of proximal development* (ZPD), an 'area' between what a child can do alone and with assistance (Vygotsky, 1978). The ZPD is supposedly made up of skills, ideas and understandings that are just beyond the child's reach, that the child is beginning to perform and can do with the support or assistance (*scaffolding*) of adults and more skilled peers (Justice and Ezell, 2004). Reviewing the test items of the *Language-Reasoning* subscale (i.e. the availability of books, materials and pictures; encouraging children to communicate; using language to develop reasoning skills and informal use of language) it is evident that emphasis is placed on the creation of social constructivist learning opportunities that include assessing whether the educator supports the children's language development and reasoning with effective scaffolding and/or whether they adjust prompts to their ZPD. For example, scrutiny is made of the availability of books, materials and activities, and whether teachers use these effectively (Rogoff, 1990).

In practice, this includes discussing pictures and asking leading questions, using prompts if necessary, and familiarising the child with possible formats used in formal school years. This may be by asking when, where, what, who and why-questions; talking about drawings; using puppets and toys for dramatic play; the teacher talking about logical relationships while children play with materials that stimulate reasoning; and encouraging children to talk through or explain their reasoning whilst solving problems (Allal and Ducrey, 2000). It may also include Rogoff's (1990) concept of 'guided participation', a process in which the teacher and children exchange knowledge through informal but important socially mediated activities. The subscale 'informal use of language' measures opportunities for children's talk, staff-child interactions and those amongst children. It uses items that assess their frequency and whether language is used informally to develop reasoning skills, for example primarily for social exchange, or to expand on ideas presented by children to develop reasoning skills.

Whilst remaining aware of the potential inadequacy of these theories in an education system regarded by some commentators as being on the verge of breakdown (Bloch, 2009), we apply them to urban and rural schools in the

Free State, South Africa, each with their own particular environmental and systemic context. Assessing the degree to which the educator effectively stimulates the pre-school children in developing language skills will thus depend on a range of determinants, from the socio-economic background of the child, to the language used in the home and the availability of resources in the classroom. Using both the *Early Childhood Environment Rating Scale (ECERS-R)* and socio-demographic data, in a multi-method approach to data collection, we thus set out to discover what, if any, stimulation is being provided to pre-schoolers (Grade R) in selected school environments, with the specific aim of drawing attention to a worrying deficit in the country's intellectual and educational development of its future citizenry.

Problem statement

Researchers estimate that 200 million children in the developing world fail to reach their potential because of poverty, stunted growth, inadequate care and deficient education (Grantham-McGregor, Cheung, Cueto, Glewwe, Richter, Strupp and the International Child Development Steering Group, 2007).

Focusing on the South African context, national literacy surveys suggest that the country is "headed for a national education crisis" (Bloch, 2009, p.12), because we "barely produce literate and numerate children". Results from both national and international surveys conducted in the past decade paint a gloomy picture of the country's levels of learner literacy and reading proficiency, both in the foundation and intermediate phases, and compared to other countries in Africa and abroad (see Department of Education's *Systemic Evaluation*, 2007; *Progress in International Reading Literacy Study [PIRLS, 2006]*; *Southern and Eastern Africa Consortium for Monitoring Educational Quality*, 2000) [SACMEQ II, 2000].

The statistics above are further substantiated by the *Annual National Assessment results of 2011* (Department of Basic Education, 2011), demonstrating that no real sustained progress had been made with regard to improving the literacy standard of South African school children in recent years, with most of the 2011 results demonstrating a further decline in literacy performances of all children involved in this survey. For example, in 2008 the national average literacy performances of Grade 3 children were only 35.31%, increasing to 42.9% in 2009 but dropping back to 35% in 2011. The 2011 statistics for the Free State were similar, with Grade 3 averaging 37% for

literacy (national level, 35%) and Grade 6 averaging 26% for language skills (nationally 28%).

Against the backdrop of research demonstrating the prolonged benefits of early childhood education in promoting children's overall development, including academic, cognitive and literacy skills (Chatterji, 2006; Dickinson and Porche, 2011), the current literacy crisis in South Africa opens up for debate a topic of critical importance to the country's education system, and raises numerous concerns and unanswered questions as to the quality of pre-school and early childhood education in South Africa. This may be seen as part of a global concern that young children are not receiving the benefit of quality programmes needed to foster their developmental well-being (Al Otaiba and Fuchs, 2002; De Witt, 2009; Justice, McGinty, Cabell, Kilday, Knighton, and Huffman, 2010), however, despite more Grade R classes being established and an increase in early childhood centres over the past decade, researchers and educationists are of the opinion that in general the quality of education in South Africa is poor, indicating a downwards trend on a yearly basis (De Witt, 2009).

Against such a discouraging background, the main question guiding this research is:

What language stimulation are pre-school children receiving in the Free State and how does it reflect and/or contribute to the educational and social malaise of the country?

Reflecting on the discussion above, two main objectives guided the present study, namely:

- To assess the quality of language stimulation programmes that are offered in randomly selected Grade R classes in the Free State Province; and
- To ascertain which of the socio-demographic variables included in this project (for example, demarcation of the school, socio-economic status of the school, educator's qualifications, educator's experience, child-educator ratio, and language of teaching and learning – LOLT), have a significant effect on the language and early literacy development of preschool children

Ethical aspects

The protocol was sent to the Free State Department of Education and permission was granted to conduct the study and publish the findings. The protocol was also approved by the Faculty of Health Sciences' Ethics Committee (UFS) (Ethical clearance number: 57/09). As part of the process of informed and mutual consent, the principals, educators and parents of children of the participating schools were advised of the study's purpose, as well as the point in time when the study would be carried out. It was explained to them that non-participation would have no adverse consequences for participants, and that the participants' privacy and anonymity would be stringently protected (these include teachers, principals, children and the different sample schools). Participation was on a voluntary basis and only schools and/or classes whose educators/principals had signed the consent forms participated.

Research design and methodology

Method

Study design and data collection measures

Two complementary approaches were implemented in this study, namely a quantitative and a qualitative research design. A randomised probability sampling strategy was used whereby 107 Grade R classes in the Free State Province were randomly drawn for this study ($N = 107$). Firstly, we employed a quantitative descriptive research design. We obtained the data by administering the *Early Childhood Environment Rating Scale (ECERS-R)* to determine the quality of early language stimulation in randomly selected Grade R classes in the Free State province. The *ECERS-R* is a widely used tool designed to assess process quality in early childhood care settings such as daycares, preschools, child care facilities, as well as many other early childhood environments (Harms, Clifford and Cryer, 2005). In order to collect the kind of in-depth data required to add to the existing body of knowledge of young children's literacy experiences we also followed a qualitative interpretive design. The classes were representative of children from various cultures and home languages and included both rural and urban settings of the province. General field observations of the early-childcare settings were made to produce descriptive portraits of each setting (and recorded on the *ECERS-R* scoring sheet), followed by semi-structured interviews and informal

conversations with educators to explore early language stimulation opportunities and identify children's and educators' needs at these settings (pilot classes).

In addition, socio-demographic information was gathered with a supplementary questionnaire that accompanied the assessment tool (*ECERS-R*). Owing to logistical constraints the influence of children's family background was not directly measured at individual level, rather these variables were analysed at an aggregate level through the demographic and socio-economic status of the sampled schools. We know from personal experience and well established research findings (see De Witt, 2009; Stanley, Richardson and Prior, 2005) that family background is an important variable in the development of children's language skills and proficiency, particularly given the socially and economically disadvantaged backgrounds of many preschool children in South Africa. Acknowledging constraints of time, resources and our own disciplinary backgrounds on the research, we nevertheless attempted to relate the quality of education in Free State schools to contrasting communities (rural and urban), and to at least begin to open up an investigation as to whether the specific school demographic as a preliminary factor, *inter alia*, had an effect in creating quality language and early literacy opportunities.

Study population and sampling

The pilot study was conducted in five education districts of the Free State Province, namely Xhariep, Motheo, Lejweleputswa, Thabo Mofutsanyana and Fezile Dabi. Overall, 107 classes were randomly selected from the 390 listed Grade R classes and early childhood centres that were registered with the Free State Department of Education in 2009. The final sample consisted of 59 urban and 48 rural classes, involving 107 Grade R teachers and 3657 children.

Procedures

The team members were properly trained in the administration of the *ECERS-R* before the investigation started. Thus, before piloting the 107 classes, four early childhood centres were identified and visited in groups of three to six by one of the principal researchers and the trained observers. To ensure consistency in the application of the *ECERS-R*, after each visit, the research team reflected on the scores awarded during the observations to clarify any

uncertainties. These were compared and differences discussed in the research team, led by one of the two principal researchers, who were experienced in the administration of the *ECERS-R*. These procedures ensured common understanding of the scale items, including addressing any clarification with regard to scoring the *ECERS-R* and correcting any inconsistencies. The data collection spanned five months from July 2009 to November 2009. Each centre and class was observed and rated during the course of the school day – in most between 08:00 and 12.30.

Measurements

The *ECERS-R*, developed by Harms *et al.* (2005) from the Frank Porter Graham Child Development Centre, was selected to assess the quality of early language stimulation programmes. This instrument is used internationally to evaluate the quality of early-care programmes and to provide feedback on the quality and needs at early childhood centres (Fontaine *et al.*, 2006; Ishimine, Wilson and Evans, 2010). It consists of seven sub-scales with related test items that rate features of the early childhood environments that directly affect children and adults in those settings. These subscales include:

- Space and Furnishing – e.g. indoor and outdoor environment/activities;
- Personal Care Routines – e.g. hand washing, safety and health practices, nutrition and toilet routines/diapering;
- Language-Reasoning – e.g. the availability of books, materials and pictures, encouraging children to communicate, using language to develop reasoning skills and informal use of language;
- Activities – e.g. fine motor, art, music/movement, blocks, sand/water, dramatic play, nature/science, math/numbers, use of TV, video and/or computer, promoting the acceptance of diversity;
- *Interaction* – e.g. supervision of gross motor activities, general supervision of children, discipline, staff-child interactions and interactions among children;
- *Programme Structure* – e.g. daily schedules, free play, group time and provision for children with disabilities;

- *Parents and Staff* – e.g. provision for parents, provision for personal needs of staff, staff interactions and cooperation, supervisions and evaluation of staff and opportunities for professional growth (Fontaine *et al.*, 2006; Harms *et al.*, 2005).

In the present study we only report the findings we obtained from the four test items of the *Language-Reasoning* subscale of the *ECERS-R*. Given the importance to our research of socio-economic factors, we developed a questionnaire (as an addendum to the *ECERS-R* – Section A) to gather appropriate background information about all such variables, notably the demarcation of the school, its environmental (communal) disposition, classroom and educator variables, such as the educator-child ratio, language of instruction, educator training and experience, classroom planning and information about the support received from the DoE. Section A comprised 17 test items and contained yes/no responses, statements that were placed on a Likert-scale from 1 to 7 (1= Inadequate; 7 = Excellent); as well as open-ended questions.

Reliability and validity

The *ECERS-R* has undergone rigorous field testing, utilisation and revision through focus-group discussion by experts in the field (Fontaine *et al.*, 2006). With regard to reliability measures, statistical analyses have demonstrated that it is reliable at the indicator and item level, and at the level of the total score. The percentage agreement across the full 470 indicators is 86.1%, with no item having an indicator agreement below 70% (Harms *et al.*, 2005). The internal consistency of the scale at the subscale ranged between 0.71 and 0.88, and that for the total score was 0.92. Numerous tests have resulted in high content and face validity rating (Fontaine *et al.*, 2006). Sufficient evidence exists of the criterion-related and predictive validity for the *ECERS-R*, including significant correlations with child outcomes, such as school readiness and emergent literacy and numeracy skills (see Lambert, Williams, Morrison, Samms-Vaughan, Mayfield and Thornburg, 2008). In the current study, the principal researchers presented the measuring instrument to six professionals from the Free State Department of Education for their comments and inputs (these include experts within the field of early childhood development and educational psychology – representing the Motheo and Xhariep District Support Teams, as well as two ECD learning facilitators/subject advisors from the Department of Education). The feedback

was very positive – they commented that the measuring instrument was clear and understandable and that it measured what it intended to measure.

Scoring the ECERS-R

Each item on the *ECERS-R* has multiple dichotomously scored indicators that are scored Yes/No, in some cases, Yes, No, Not Applicable (N/A). (Lambert *et al.*, 2008). Items are rated according to the following rating scale:

1 = Inadequate, 3 = Minimal, 5 = Good and 7 = Excellent (Rentzou, 2010).

This entailed the following:

- A rating of 1 was given if any indicator under 1 was scored *Yes*.
- A rating of 2 was given if all indicators under 1 were scored *No* and at least half of the indicators under 3 were scored *Yes*.
- A rating of 3 was given when all the indicators under 1 were scored *No* and all indicators fewer than 3 were scored *Yes*.
- A rating of 4 was given when all indicators under 3 were met and at least half of the indicators under 5 were scored *Yes*.
- A rating of 5 was given when all indicators fewer than 5 were scored *Yes*, and previous criteria met.
- A rating of 6 was given if all indicators under 5 were met and at least half of the indicators under 7 were scored *Yes*.
- A rating of 7 was given when all indicators under 7 were scored *Yes* and previous criteria met.

(see Lambert *et al.*, 2008, pp. 44, 45)

Trustworthiness

In an attempt to ensure the trustworthiness of our findings and interpretations, we used three types of triangulation:

- multiple methods (e.g. a validated research instrument, the *ECERS-R*, observations and field notes, and individual interviews with Grade R-educators)

- multiple sources (a randomly selected sample of Grade R classes and educators representing five education districts in the Free State Province); including multiple investigators (two lecturers, one from Psychology of Education and one from Paediatrics; five second-year medical students and nine postgraduate honours students in Support Teaching).

Data analysis

The Statistical Package for Social Sciences (SPSS Incorporated, 2001) was used in the analysis of the quantitative data (descriptive and inferential statistics). Analysis of qualitative data was structured around iterative and inductive interpretation of field and diary notes, supported by interview transcripts, with cross-reference and participant verification, followed by the identification of main/sub-themes and discussion of emerging findings.

Results and discussion

Socio-demographic information

Information obtained from the supplementary socio-demographic questionnaire showed that Sesotho (40%) was the main language of instruction in the majority of the classes, followed by Afrikaans (35.1%), English (14.9%) and Setswana (10%). The socio-economic ratings of the classes were as follows: good (31.8%); average (22.6%) and inadequate (45.6%). These ratings were obtained from the educators of each school by using a Likert-scale to rate the school (e.g. it varied from 1 = Inadequate to 7 = Excellent). The majority of the selected sample were paying school fees ($n = 67$), which varied as follow: 17.8% paid less than R200.00 per month; 32.8% between R200.00 and R400.00 per month; 19.6% between R400.00 and R550.00 per month, and 29.8% of the schools were charging a fee of more than R550.00 per month. A reason for concern is the educator-child ratio recorded in the pilot study. The ratio in the majority of the classes (59.5%) was more than 31–1, with more than 20% of these classes catering for more than 41 children per educator.

With regard to educators' qualifications, 24.2% did not have the required basic education qualification of three years' training; 39.3% had a three-year

education qualification; 10.6% had an Advanced Certificate in Education (ACE, in Support Teaching); whilst 21.3% had an education qualification/degree in Foundation Phase (four years of training). Four educators held a B.Ed. Hons. degree in Support Teaching and one educator held a master's degree in Psychology of Education. The majority of the sample had more than seven years' teaching experience in early childhood development (37%); 40% had between four to six years' teaching experience, whilst 23% had less than three years' teaching experience in early childhood education. The level of departmental assistance educators receive was quite worrying: 46% of the educators indicated that they did not receive any assistance and/or guidance from departmental officials, including assistance from ECD learning facilitators/subject advisors. In a follow-up question, 45% of those educators who did receive assistance revealed that they were not satisfied with the level of support/assistance they received from the DoE. Furthermore, the majority of educators (58.8%) indicated that they needed more training in early childhood development aspects.

Table 1: Summary of *ECERS-R* scores for the subscale Language-Reasoning amongst Grade R-classes (score distribution, *N* = 107)

	Inadequate (1–2)	Minimal (3–4)	Good (5–6)	Excellent (7)
Language-Reasoning				
Books and pictures	57.5%	8.5%	2.1%	31.9%
Encouraging children to communicate	40.2%	13.1%	6.2%	40.5%
Using language to develop reasoning skills	31.8%	19.5%	2.1%	46.6%
Informal use of language	67.3%	9.4%	1.9%	21.4%

Evident from the data presented in Table 1, is the presence of an overall dichotomy that was apparent in the majority of all our observations and quantitative data, namely that the classes are divided into two large groups: those that do well versus those that fare poorly on most of the subscales. Thus, for the purpose of this research, Chi-square tests (χ^2) of statistical significance were conducted to determine if significant relationships existed between socio-demographic variables (included in this pilot study) and the four items

of the *Language-Reasoning* subscale *ECERS-R*. The socio-demographic variables considered in this pilot study were: demarcation of school (rural or urban settings); socio-economic status of school; school fees paid; LOLT in school; educators' qualifications; years of teaching experience and educator-child ratio (note: only significant results will be discussed).

Books and pictures

Reviewing the available literature it is evident that one of the most important influences of educators on young children's literacy development is the frequency and quality of educator-child book reading in classroom settings, as well as their beliefs about young children's literacy development (see Dickinson and Porche, 2011). Book-reading not only enhances young children's language development but also exposes them to more formal language of print and helps them with their developing knowledge of grammar, syntax and vocabulary (Dickinson and Porche, 2011; Fontaine *et al.*, 2006; Harms *et al.*, 2005). Therefore it is important that educators provide print exposure (print referencing) within the framework of meaningful and contextualized storybook reading on a daily basis because these interactions provide an anchor for children's metalinguistic explorations and are important precursors for successful emergent literacy skills development (Justice and Ezell, 2004). Reflecting on the above it is worrying that two thirds of the pilot sample had minimal or inadequate exposure to books, pictures and other learning material (see Table 1).

Furthermore, Chi-square statistics demonstrated a significant relationship between the demarcation of the schools (i.e. urban and rural) and the availability of books and pictures $X^2(1, N = 89) = 10.00, p = .01$. In addition, compared to urban schools, the vast majority (more than 70%) of children from rural schools in this pilot project had inadequate exposure to books and pictures, more so in schools whose LOLT was Sesotho (even fewer books than schools in the other language groups, $p = .00$). Significant relationships also exist between the availability of books and pictures and the following variables: socio-economic status of the school, $X^2(6, N = 91) = 15.67, p = .01$; school fees payable, $X^2(9, N = 94) = 28.00, p = .00$; and LOLT, $X^2(9, N = 105) = 24.80, p = .00$. In practice, this implies that an increase in the socio-economic status of schools resulted in a higher percentage of children being exposed to quality books, materials and pictures as a means of enhancing their language skills.

This predisposition was also evident in the payment of school fees, i.e. in the majority of schools where parents did not pay school fees their children had inadequate access to books, materials and pictures, whilst the situation was quite the opposite in schools which charged the highest school fees. Other significant results indicated that classes with educator-child ratios of > 40 had even less access to quality books and teaching materials, i.e. as the number of children in the classroom increased so the children had less access to and insufficient exposure to books and pictures ($p = 0.00$). Interestingly, in contrast to other studies (see Fukkink and Lont, 2007), Chi-square results demonstrated no significant relationship between the availability and exposure to books and pictures and educators' years of experience and/or educators' qualification: $X^2(6, N = 103) = 3.69, p = .71$. It can therefore be said that the socio-economic position and financial implications were stronger predictors of the availability of books and pictures in the present study.

The significant findings from the books and pictures subscale were also corroborated by the field note observations recorded by members of the research team. These revealed that whilst some classes in urban and rural schools had a reading corner, the majority of classes in rural schools did not. Nor could all children in schools access it freely. One of the female educators at a rural school remarked:

You know, Mam, it is better for the kids, now that she (educator) has been booked off for sick leave until the end of the year – at least the substitute teacher allows them to read the books in the reading corner and they can play with the dolls and dress-up clothes in the cupboard – they were never allowed to do that before.

In some of the classes, reading a book to children was included as a daily activity, but then they had to sit still, be quiet and listen, with no social interaction or discussion, and only limited reciprocal questioning opportunities. It was thus mainly a whole-class activity. However, observations at most of the schools revealed that educators did not read stories to children on a daily basis. Further field notes revealed that most of the books, language materials and activities were not age-appropriate and additional books borrowed from the library were rarely available. These observations were corroborated with statements such as:

As you can see, I only have a few books available and no reading corner . . . the books are not on the children's level. I once borrowed books from the library but the children ruined the books. . . I never borrowed books from the library again. (Educator – rural school)

Other comments were:

No, I do not read stories to the children each day. . . there simply is not enough time and my class is too big. . . hmmm. . . perhaps two times per week, I think. (Educator – urban school)

From the results above it is evident that the variables contributing to the availability of books and other materials to nurture language development within the South African context are similar to those of other developing countries (see Aboud, 2006). They pose unique challenges to educators in socio-economically disadvantaged milieus because the most significant relationships were revealed between socio-economic status and the availability of books and materials. These findings were triangulated using qualitative methods of data-gathering, which confirmed results from the *ECERS-R* and also corroborated the findings of other South African researchers. For example the findings from De Witt's baseline study (2009) carried out in five other provinces in South Africa demonstrated similar results, i.e. in very poor communities resources and equipment were urgent needs and that the basic resources (including books) to provide quality education does not exist in many schools. Even those caregivers and educators who want to do justice to quality teaching find it very difficult because of the lack of resources (De Witt, 2009).

Encouraging children to communicate

Social constructivist theorists (e.g. Vygotsky, 1978) stress the importance of creating interactive socio-linguistic opportunities (with peers and significant others) for children to develop appropriate social skills that guide cognitive and language development. Information from the *ECERS-R* scores revealed that just over half of the educators in the present sample did not encourage children to communicate (inadequate = 40.2%; minimal = 13.1%). Chi-square statistics yielded significant results for the following socio-demographic variables, namely, school demarcation: $X^2(3, N = 83) = 7.87, p = .04$; socio-economic status of school: $X^2(6, N = 87) = 12.21, p = .05$; school fees payable: $X^2(9, N = 88) = 20.57, p = .01$. As with similar findings, we found a dichotomy between rural and urban schools and those which are less and more affluent. For example, over half of the educators at rural schools made few or no attempts to encourage children to communicate, whilst a similar proportion at urban schools did encourage children to communicate, irrespective of

educator-child ratio or educator qualifications and years of teaching experience. In some of these settings (mostly urban) field notes suggested that educators encouraged children to talk about their drawings and assisted those with limited communication skills. However, this was not always prevalent at all the schools. Some educators (in both rural and some urban schools) were rather intrusive in their attempt to engage the children and would instruct them rather than prompt or encourage them to communicate. Reviewing the socio-economic status of the sample schools (which include the payment of school fees) we found the same dichotomy, corroborated by the field notes, that in more affluent schools more books, materials and props were available during free play and used during structured activities as a means to enhance children's communication skills.

Some major concerns were raised during the informal discussions with educators at some of the sample schools that relate specifically to the teaching of English second-language pre-school children. Although some educators did make an extra effort to engage these children in classroom activities this was not always the case in all classes. Of concern was that discrepancies were even recorded at the same school setting, involving two different classes and/or educators (a former Model C school which now mainly caters for Sesotho-speaking children from the surrounding communities). The two educators, both from rural, former Model C schools, responded as follows:

To encourage ESL children to take part in classroom discussions, I invite parents or non-teaching staff to my classroom to assist children. . . and also I have learned basic instructions in Sesotho to assist me in explaining what they must do. (First educator, rural, former Model C school)

I do not know how or have the time to assist children with language problems – sometimes I ask some of the children that can speak Sesotho to translate to them what they must do – I do not know Sesotho at all. (Second educator, rural former Model C school)

The relevancy of these findings were of particular importance for the researchers, because research shows the importance of reciprocal conversations and educator's talk to foster language development and early reading success (Dickinson and Porche, 2011) during free play and structured group activities. In practice this implies expanding not only on their oral communication, but also on their written communication (i.e. encouraging print awareness). For example, written communication can be encouraged through language experience stories, as children's words can be written as they share their thoughts about a field trip, or a picture they have drawn. Through this expression, children will learn that their words can be written

down and read. Additionally, they should have access to a variety of materials that encourage language, such as play telephones, puppets, flannel board stories, dolls and dramatic play props, small figures and animals (Fontaine *et al.*, 2006; Harms *et al.*, 2005). More so, pre-school children's communications can provide teachers (and significant others) with important insights into the way they see and think about the world. By encouraging children to communicate, such as by talking about drawings, dictating stories, sharing ideas, reciting poems or singing songs, educators not only gain important insights into the way children 'see' and 'think about the world', but they will also be able to meet the children's language, social and emotional needs more effectively. This will assist them in creating a curriculum that is responsive of preschool children's interests and needs (Wright, Bacigalupa, Black and Burton, 2008).

Using language to develop reasoning skills

Language development is multi-dimensional in nature and apart from communication, it also encompasses aspects of thinking and reasoning (see Naudé, Pretorius and Viljoen, 2003). Thus, an important aspect assessed by the *ECERS-R* instrument is how educators use language to develop children's reasoning skills and how they guide them (during free play and structured activities) to process information about the world around them. The more children are encouraged to think for themselves, the more their reasoning will develop (Fontaine *et al.*, 2006; Harms *et al.*, 2005) and the fostering of these skills lays the foundation for the development of a repertoire of important reading and literacy skills, for example improved vocabulary knowledge and reading comprehension (Dickinson and Porche, 2011).

Reflecting on the above, the results from Table 1 are promising, especially compared to the other results of the *ECERS-R*, as 48.7% of educators in the sampled classes effectively used language during structured activities to develop children's reasoning skills. Chi-square statistics yielded significant results for school demarcation, i.e. significant relationships were shown for urban schools, $X^2(3, N = 85) = 8.35, p = .03$; for schools with higher school fees, $X^2(9, N = 88) = 17.03, p = .04$; LOLT and using language to develop reasoning skills, $X^2(9, N = 99) = 18.50, p = .02$; and educators' years of teaching experience, $X^2(6, N = 97) = 12.73, p = .04$. Focusing on the results of the last two variables this is of particular interest to the researchers, namely that in schools where educators were familiar with the LOLT and had more advanced language skills themselves, they interacted more frequently with the

children and there were higher incidences of analytical talk, including reciprocal discussions to enhance children's language reasoning skills. Similar results were reported for educators who had more years of experience in early childhood education (Bouchard, Bigras, Cantin, Coutu, Blain-Brière, Eryasa, Charron and Brunson, 2010). The results and observations above are corroborated by data obtained from the informal discussions with the educators, with some of the more experienced educators engaging in conversations about daily events, and talking about logical relationships and sequencing of events during free play and structured activities. One educator remarked:

I try and provide a variety of activities that stimulate the reasoning abilities of the children in my class, for example categorising objects and sorting picture cards, identifying similarities and differences . . . I also encourage the children to explain how they would solve a problem, etc. (Educator – urban school)

Another educator said:

Yes, that is the ideal situation, but with so many children in your class, you simply cannot cater for individual needs and you rarely have time to ask children to explain how they have solved a problem. (Educator – rural school)

These results potentially may have positive consequences for Grade R children who were involved in this pilot study. Longitudinal evidence has demonstrated that language skills are also directly related to achievement at school, forming the basis for the formulation of questions, elaboration of knowledge and the reduction of ambiguity in new learning situations (Naudé *et al.*, 2003). Children's vocabulary, their comprehension and the flexibility of their language usage as a medium of thinking and communication, thus have a direct influence on their ability to gain returns from formal instruction. Furthermore, it is imperative that educators of pre-school children be competent in the LOLT of the specific school as those with better language skills are more likely to use responsiveness in their interactions with the children – such as listening and responding to initiatives than less skilled educators who tend to be more direct in their interactions with the children (Bouchard *et al.*, 2010).

Informal use of language

Language plays a pivotal role in supporting literacy and reading development in children – this has been confirmed by both theoretical accounts of language

and literacy studies, as well as longitudinal evidence from various researchers (see Dickinson and Porche, 2011; National Early Literacy Panel, 2009; Storch and Whitehurst, 2002). Thus it is essential for families and caregivers to encourage oral language development as early as possible, by responding quickly and consistently to the verbal and non-verbal signals of infants and toddlers (Harms *et al.*, 2005). During children's pre-school years, adult-child conversations during free play and structured routines should occur often and must be encouraged at all times because language acquisition is fostered when adults (educators and significant others) are "tuned in and responsive to what children are saying" (Dickinson and Porche, 2011, p. 871). From the literature it is evident that young children use language for many purposes, including meeting their wants and needs, to gain knowledge about the world around them, to develop and maintain social relationships and to exchange information with others (Romski and Sevcik, 2005). Researchers believe that educators should restrict children's ideas as little as possible so that children have the freedom to express and explore the ideas they find most intriguing (Wright *et al.*, 2008). In the present study the utilisation of informal language during staff-child and child-child interactions was the fourth item measured with this *ECERS-R* measuring instrument.

The results depicted in Table 1 showed that the vast majority (more than 75%) of educators did not effectively use (or encourage) informal language during free play and/or routines – this included adult-child and child-child interactions. Further analyses revealed that this was apparent for both rural and urban settings – with 73.1% of rural classes and 66.1% of urban classes scoring an 'inadequate' or 'minimal' in this domain. In addition, this is the only variable where similar results were shown for both rural and urban schools irrespective of payment of school fees, socio-economic status, educators' qualifications and/or years of teaching experience. Chi-square statistics demonstrated significant relationships for the following variables, namely: Educator-child ratio, $X^2(6, N = 91) = 19.36, p = .03$ and LOLT, $X^2(6, N = 105) = 15.15, p = .02$.

Field note recordings and observations revealed that many educators used language in an authoritarian manner: to control behaviour, for routine management and to answer children's questions. Similar results have been reported in other studies, i.e. educator interaction with children often involve many 'no's' and 'don't' instead of receptive and reasoning conversations (Gol-Guven, 2009). It has been postulated that this hierarchical communication style perhaps has to do with the cultural emphasis of control and obedience still being present in many cultures around the world today

(Gol-Guven, 2009). Another explanation for this in the present study, may be that higher educator-child ratios contributed to this authoritarian interaction. The implications are that children's talk is discouraged for much of the day in the majority of the classes, leading to passive student engagement in educator-directed activities and limited peer interactions. This is verified by the following response of one of the educators:

The only time when you can really allow informal conversations among children is during free play . . . I have too many children in my class to allow for informal conversations during structured activities. (Educator – urban school)

Conversely, positive field notes indicated that at some of the schools educators encouraged the development of mutual respect between children/children and children/adults. In addition, educators modelled good social skills, and peer interactions were mostly positive. However, only a few examples were recorded of children actually working together to solve a problem or making something creative, and this mostly happened during free-play

Reviewing the literature and from previous discussion in this paper, the authors reiterate the importance of shared storybook reading for preschoolers. Findings further suggest that the use of interactive and analytical talk with children during book reading also enhances informal language usage, including vocabulary development and reading comprehension in Grades 3 and 4 (Dickinson and Porche, 2011; Storch and Whitehurst, 2002). Thus, reflecting on the notions of social-constructivism and social-cultural learning opportunities it is imperative that informal language usage should be encouraged as often as possible and should include questioning, expanding on children's responses, explanation of vocabulary and both verbal and non-verbal responding (Roberts, 2008).

Conclusions

Few if any educationists would attest to the claims of social constructivist theorists that early language development is rooted in the interactions children have with their parents, significant caregivers, childcare providers, and peers. These early social exchanges seem both to foster the development of language skills and provide a vital foundation for children's school readiness and academic achievement later in life, and are directly linked to family income, the availability of learning activities (such as book reading or storytelling), parental involvement (e.g. parents' responsiveness) and quality parent-child

interactions (Bhattacharya, 2010). Thus, from the outset it is evident that the majority of children in developing countries face serious challenges in attaining basic literacy and academic skills, in particular low parental education, though recent research has shown that stimulating pre-school environments may buffer the adverse effects of a low-stimulating home environment (De Witt, 2009).

From the above it is evident that pre-school educationists have a mammoth task, as they are expected to meet children's needs and even equalise disparities amongst those who enter school from remarkably diverse cultural, linguistic and economic backgrounds. This is particularly evident in the area of language and emergent literacy development, both of which serve as critical determinants of children's successful adjustment to the pre-school milieu and as consistent predictors of later outcomes in reading and written language in the higher school phases (Justice *et al.*, 2010).

Reflecting on the main research question: '*What language stimulation are pre-school children receiving in the Free State and how does it reflect and/or contribute to the educational and social malaise of the country?*' both quantitative and qualitative results obtained from this pilot study demonstrated distinct differences in the quality of language input and language stimulation offered in the majority of urban and rural schools, which were also apparent when comparing more affluent and socio-economically less privileged schools. Significant results (chi-square statistics) have been reported between the items of the *Language Reasoning* subscale and the following variables, namely school demarcation, socio-economic status, payment of school fees, educators' teaching experience and LOLT – clearly demonstrating the interplay of socio-demographic, class- and educator-related variables and the affect thereof on the quality of language input and literacy development of Grade R children.

Results from this pilot study also confirm findings from other South African studies carried out in Gauteng, the Western Cape, KwaZulu-Natal, Limpopo and Mpumalanga (De Witt, 2009), that the quality of early childhood educational programmes offered in many South African Grade R classes and pre-school centres is below standard and needs radical improvement (De Witt, 2009). The researchers were therefore justified in challenging the 'idealist' interpretation of social constructivism as it relates to pre-school stimulation of language in this pilot study. Findings revealed that not all language experiences were favourable, nor did all educators support pre-schoolers' language development and reasoning with effective scaffolding, whether

through educator-child or child-child interactions. As an example of the wide gap that still exists in the schools, we found that the language input of Grade R children and available resources for language stimulation was inadequate in a sizeable proportion of the schools we visited. More than 70% of children from rural schools did not have access to quality books or educational materials, and despite research demonstrating the benefits of shared storybook-reading, little evidence exists that educators effectively use books and pictures for scaffolding of other important language and emergent literacy skills (such as vocabulary enhancement, and the development of phonological and syntactic awareness skills). Overcrowded classes and financial constraints were further recorded as major reasons the educators could not provide quality language stimulation. A major concern raised by the majority of the educator participants is the educator-child ratio, with more than 20% of the classes having to cater for more than 41 children and nearly 60% comprising more than 31, with the vast majority having no additional classroom assistants. Further, it was noted that high educator-child ratios resulted in educators being less responsive in their interactions with children and they engaged in more authoritarian teaching and communication styles, with little encouragement of educator-child and child-child interactions. Results of the pilot study raised further concerns about the existence of language-related barriers between children, their teachers and their learning environments. Not all teachers were fluent in the LOLT offered at the learning sites (classes) and others were unable to communicate effectively with children in their classes because they were unfamiliar with the children's home language. This has severe consequences for pre-schoolers' language and emergent literacy skills development.

The researchers also report on the positive outcomes of this pilot study. Notwithstanding the higher challenges faced by educators in rural and less-privileged childcare settings and classes, observations and field notes showed that there are Grade R classes in very poor communities doing quite well. More is not always better, but rather it is the quality of language stimulation that makes a difference (i.e. engaging children in meaningful print-based activities and using language to develop reasoning skills lays sound foundations for academic language competence). The saying that 'quality is infectious' is significant when visiting some of these schools. A capable principal, well-organised office and clean and safe immediate physical surroundings were often signs of a good quality of language stimulation.

Recommendations

Educators and administrators, concerned with early childhood education, especially those in the national and provincial departments of education, play a critical role in shaping the future of the country's citizenry and democracy. Therefore, it is unrealistic to expect educators to fully implement quality standards and effective educational practices without public policies and funding that support a system of early childhood education that is grounded in providing high-quality developmentally appropriate experiences for all children. The objective must be improvement in both realms: more early childhood professionals engaging in developmentally appropriate educational practices, and more policymakers committing public funds to support them. Against this backdrop, insights from this pilot study reiterate the lack of availability of basic resources at some of the classes we visited – most notably basic human rights issues such as access to safe and healthy environments. It remains deeply problematic that what may appear prescriptive recommendations are in fact based on descriptive reasoning, that is the schools will only improve when society itself has achieved equality and redress. It threatens to become a vicious circle.

Focusing on quality language input, one of the major issues facing policymakers is the LOLT – do learners receive education in English or their mother tongue? Whilst appearing democratic, and popular amongst some groups, the latter option can be to the detriment of children when later entering the world of employment in which English is the *lingua franca*. From this study, it is evident that the majority of pre-schoolers did not have adequate exposure to appropriate learning material and storybooks in any language, English or otherwise. It is not surprising therefore that educators struggle to strengthen their language development and nurture emergent literacy skills development. Moreover, addressing the current educator-child ratio in Grade R classes must be one of the priorities of government. It is evident that many educators themselves lack sufficient knowledge and skills needed to provide high-quality care and adequate language stimulation to young children; therefore they must support educators along this 'journey' to develop pre-school children's language and literacy skills. In practice, this requires educators having opportunities for professional learning, workshops, departmental guidance and in-service training to further their expertise. This includes not only the development of adequate social language skills, but also the development of an adequate instructional language that may serve a variety of purposes, for example, expressing opinions, interacting in

discussions, questioning, seeking information and sharing ideas (MacDonald and Figuerdo, 2010).

Educator training should focus on guiding educators to use a variety of instructional materials, the development of children's emergent literacy skills and how to develop reasoning and conceptualisation skills amongst them, instead of using repetitive exercises and copying activities. Too much emphasis is placed on memorisation at the expense of reasoning and vocabulary development, and this jeopardises children's interest and logical thinking abilities, including higher-order thinking skills and creativity. Beyond training, simple structural changes can also improve the quality of language exposure, for example, the educator's presence during free play and breaks ('snack time') is a *sine qua non* for encouraging conversation (i.e. educator-child and child-child conversations) (Bouchard *et al.*, 2010).

In South Africa, the provision of Early Childhood Development (ECD) programmes is fragmented with the Department of Social Development, Department of Health and the Department of Education. The *Education White Paper 5* of 2001 is the Department of Education's contribution to the topic. The fact that there are so many stakeholders increases the dangers of fragmented services, lack of integration and poor quality control. The obvious key areas of concern include the extent of ECD provision, inequality in and access to ECD services, as well as the variable quality of ECD services. Our study highlights the often inadequate quality of a specific but critical component of ECD, namely the quality of language input and the implementation of quality early childhood language stimulation programmes. This lack in provision increases the possibility of many children not achieving their optimal potential. Many positive developments have occurred since 2001 and many recommendations will impact directly on the areas of concern emphasised in this study. These include publications by the Department of Social Development on ECD, the so-called *Education Roadmap*, and the recent target set by the Department of Education that 95% of schools should have functioning libraries. The policy proposals set out in *White Paper 5* envisage that 85% of all five-year-olds (\pm 810 000) should be in reception-year programmes (pre-primary school). It also sets out the importance of a curriculum, a qualifications framework and career paths for ECD practitioners, norms and standards, accreditation and registration and a targeted grant system. The danger in these very commendable strategies is that they may culminate in a lack of implementation at grassroots level because of the complexities of the system and barriers to implementation.

For the interim, we argue that it is possible (at relatively low cost) to improve the quality of language input and emergent literacy skills development at early childhood centres and Grade R classes. The critical aspect is to realise that we cannot afford a generation of semi- or wholly illiterate children (and future citizens) squandering the gift of our new democracy because we did not address the factors that needed change and which were well within our control. Thus, one of the crucial changes and challenges still facing *post-apartheid* South African democracy is to reconstruct a society and an education system that will create excellent conditions for teaching and learning, accentuate the notion of a rights culture and embrace the democratic values of liberty, equality and human rights, inherently capable of meeting the diverse needs of every learner and preventing learner breakdown and exclusion (Van Staden, 2011).

We conclude with the following quotation:

When a nation claims that children are its future, that nation needs to be fully aware of the social obligations implicit in such a statement. Any country and citizenry that truly believes attention to children's care and education during the early years is of inestimable value to that society would make every reasonable effort to invest in pre-school education (Jalongo, Fennimore, Pattnaik, Laverick, Brewster and Mutuku, 2004, p.79).

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