

Home-Based Literacy Experiences of Severely to Profoundly Deaf Preschoolers and Their Hearing Parents

Carlin Stobbart and Erna Alant

Abstract:

The low literacy levels achieved by deaf children are of ongoing concern for educators and researchers alike. This study aims to further enhance understanding of issues that might impact on children's literacy learning by focusing on a description of home-based literacy experiences of severely to profoundly deaf preschoolers as provided by their hearing parents. Parents of 29 preschool deaf children were selected to complete a questionnaire, which was based on four identified literacy contexts: the physical and functional context, the language context, the affective context, and the educational context. Results indicated that the children are exposed to literacy-rich home environments. Limitations in the quantity and quality of text-based interaction between the deaf preschoolers, their hearing parents, and older siblings were identified. Furthermore, parents regarded development of language and communication as more important than early acquisition of literacy skills. Parents assigned the greatest responsibility in teaching literacy skills to teachers.

Keywords Emergent literacy. Early literacy skills. Home-based literacy experiences, Severely to profoundly deaf. Literacy-related contexts

Historically, research into the acquisition of reading and writing skills in deaf children has consistently revealed low levels of literacy (Marschark and Lukomski 2002; Paul 1998; Swanwick and Watson 2005). Current statistics indicate that about two thirds of the deaf adult population are functionally illiterate and unemployed in South Africa (McAllister 2004). This corresponds with worldwide concerns regarding the fact that deaf people generally underachieve in acquisition of their literacy skills, with far-reaching implications for their personal development (Loeterman et al. 2002; Paul 2003; Swanwick 2002; Watson 1999; Webster 2000). The ability to read and write competently increases likelihood of academic success, provides more career opportunities and ultimately leads to greater personal fulfilment and improved quality of life (Blume 2003; Koppenhaver et al. 1991). Given this situation, there is an urgent need to investigate the factors that may contribute to improving the literacy skills of deaf individuals. The focus of this research was on emergent literacy as one factor to consider in the understanding and intervention of literacy problems in the deaf. Recent literature (Schirmer and Williams 2003; Swanwick and Watson 2005) highlights the need for a paradigm shift in the understanding of the nature and importance of deaf children's early literacy development.

Teale and Sulzby (1986) adopted the term 'emergent literacy' to signal a break from the traditional focus on reading readiness where the acquisition of specific skills are implied and to emphasize the fact that "children are in the

process of becoming literate, as the term emergent indicates" (p. xix). Emergent literacy includes the children's knowledge concerning the forms and functions of print and the relationship between oral and written language as well as early skills relating to book orientation, early print awareness and knowledge of print, prior to acquisition of formal literacy skills. Development of reading and writing skills is an interactive process that involves communication (receptive and expressive), reading and writing related to everyday life, irrespective of the mode of communication used for the deaf child. Whitehurst and Lonigan (1998) emphasized that emergent literacy consists of skills, knowledge and attitudes that are developmental precursors to reading and writing and the environments that support these developments. These components are not only interrelated, but they develop simultaneously and interactively along a developmental continuum with its origins early in the life of the child (Teale and Sulzby 1986; Watson 1999; Whitehurst and Lonigan 1998).

Acquisition of emergent literacy skills in deaf children can be considered with reference to three issues. The first issue relates to the fact that there are conflicting views in the literature on whether reading theories based on hearing children can be applied to the understanding of reading development and reading difficulties of deaf children. Webster (2000) identified two main branches of literacy research in the field of deafness. One branch highlights "models constructed around the unique learning characteristics of deaf individuals (literacy different) which includes strategies for bypassing areas of literacy development that are inherently problematic, such as the grapheme-phoneme correspondence" (p. 139). The other branch focuses on "similarities between the literacy development in hearing and deaf children (literacy same)" (p. 140) where the reading and writing processes in deaf children are understood and approached through resources and activities, which have been shown to be effective for hearing children. Implications for emergent literacy development from the "literacy same," approach is that reading can be introduced "via personal, meaningful, and purposeful exposure to print-rich environments, including story reading so that these literacy events are closely integrated with the children's language development" (Webster 2000, p. 140).

Regarding "literacy different," Williams (1994) pointed out that the language and literacy worlds of young deaf children are probably more diverse than those of their hearing peers, as they move in and out of contexts where different language modalities are used by people of different levels of communicative competence. A comprehensive understanding of the nature of these differences may foster the development of strategies and materials that may be more effective for the deaf. Therefore, using the understanding of differences between hearing and deaf children's literacy development and the criteria that optimizes literacy development of hearing children, the challenge becomes how to apply these insights and criteria within any given language approach to facilitate and support the early literacy development of young deaf children.

The second issue that needs consideration in the emergent literacy development of young deaf children relates to the fact that research has traditionally focused mainly on the linguistic development of deaf children. There has been little research on deaf children's early literacy learning, partly because of a general belief that a primary communication mode (spoken or sign language) is a precursor to the development of literacy skills and thus takes precedence over the development of literacy skills (Sagstetter 2004; Webster and Heinemann-Gosschalk 2000). The language difficulties of deaf children and mode of communication adopted by parents of deaf children cannot be ignored when considering the literacy acquisition of a deaf child.

The third issue to raise in the emergent literacy development of deaf children is that the study of deaf children's early literacy experiences highlights fundamental questions about access to language and early interaction in their home environments. Heinemann-Gosschalk and Webster (2003) stated that there are generalized findings in the literature about parents' difficulties in providing early literacy experiences to their young deaf children but very little on exactly what these difficulties are. According to Teale (2003), learning to read and write is a complex process, which must be understood with consideration of the context and culture within which it occurs. Acquisition of emergent literacy can thus not be separated from the context of the deaf child's development and the role of significant adults in this context. According to Webster and Heinemann-Gosschalk (2000), a socio-cultural perspective on literacy challenges the assumption that literacy should be taught as a system of rules and draws attention to the role of adults in interaction with the deaf child. The sociocultural perspective highlights the quality of the child's interactive encounters, shared most often in the early stages with adults around text. This is the essence of emergent literacy, which has its roots in the early meaningful literacy-based (involving reading and writing) interactions between deaf children, their parents and siblings. Therefore, a description of home-based literacy experiences must be based on an understanding of the contexts in which it occurs. Light and Kelford-Smith (1993) suggested that literacy events are embedded within multiple contexts, which affect both the child and the literacy event. Based on the work of these authors, four contexts surrounding the literacy experiences of young deaf children that are important in describing their home-based literacy experiences have been identified:

The *affective context* refers to the parents' values and beliefs about literacy and their expectations of literacy development. Morrow (1993) stated that the emotional and motivational context comprises the relationship among the individuals in the home, especially as reflected in the parents' attitudes towards literacy and their aspirations for their children's literacy development.

The *educational context* refers to the collaboration between the parent and the teacher in facilitating literacy experiences for the young child. It also

includes the guidance and support parents receive from teachers in this regard. Heinemann-Gosschalk and Webster (2003) indicated that most parents do not receive advice from professionals regarding effective literacy interaction with their deaf children.

The *physical and functional context* refers to the elements of the actual physical environment surrounding the child and the structure and function of daily activities. The functional aspects refer to the functions assigned to reading and writing activities in the home, the time and space created for such activities as well as the child's interest in such activities. The physical aspects include the literacy materials available in the home (Morrow 1993). This physical and functional context refers to the "culture of literacy" in the home and the family's literacy routines.

The *language context* refers to the interaction between adult and child during literacy activities and the patterns of language use within these interactions. When the child is immersed in literacy within an interactive and supportive home environment, the child has the opportunity to explore a range of print communication and can engage in activities of interest.

These four literacy contexts provided the background to the development of the questionnaire implemented in the research methodology.

Methodology

Design

A survey mode of inquiry was implemented and data were collected through a self-administered questionnaire. A pilot study was conducted to ensure that the questionnaire measured the target constructs. The three phases of the pilot study included the finalization of the English questionnaire, the translation of the English questionnaire into Afrikaans with back translation and the field-testing of both questionnaires.

Participants

Four government schools for the deaf and two private preschool units for language and hearing-impaired children were approached to participate in the research. Within the selected schools, all the children who met the selection criteria were invited to participate. The speech-language therapists at the schools assisted with the selection process. Participants were selected according to the following criteria stipulated for parents and children.

Selection criteria for parents:

- Only parents with normal hearing were included. Deaf parents were excluded, as they do not experience the same language

barriers as hearing parents when interacting with their deaf children through sign language (Erting and Pfau 1997).

- Parents with proficiency in English or Afrikaans at a level that they were able to complete the questionnaires were included in the sample. This was to ensure that parents could independently complete the questionnaire.
- Parents had to be willing to participate in the research by providing the information requested on the questionnaire. Parents signed a consent letter indicating their willingness to participate.

Selection criteria for children:

- Children included in the research had congenitally or pre-lingual sensori-neural deafness.
- Deafness was within severe (80–100 dB) to profound ranges (100–120 dB).
- Children were between 2 and 7 years old, as this is the age where they are in early intervention programmes or at preschools and not yet exposed to formal literacy instruction. Children up to the age of 7 years were included to accommodate children who were diagnosed late and were thus still in preschool programmes.
- The mode of communication could be either oral, sign or total communication. A distinction in modes of communication was beyond the scope of the present research.
- The children were either day scholars or weekly boarders. Children in long-term boarding were excluded, as they do not have the opportunities for regular literacy experiences in the home environment. It was decided to include weekly boarders (at school from Monday to Friday), as most of the children at the government schools were boarders.

The children were typically developing cognitively. Cognitive development was determined by viewing children's records and discussion with the speech-language therapists and teachers at the various schools.

The participants consisted of parents of children, from the various participating schools, who met the participant selection criteria. Forty children out of a preschool population of 87 children met the stated selection criteria. Following selection of the initial sample of 40 deaf children, letters were sent home with these children, requesting parents' consent to

participate in the research: 32 parents indicated their willingness to participate in the research. Following the parental consent, 32 questionnaires were issued. A total of 29 questionnaires was returned: a return rate of 91%. Table 1 (at end of article) provides some demographic information about the main participants (parents) and their children.

Table 1 shows that most respondents were mothers (66%), married (76%) and within the age of 31 – 40 years (62%). Respondent's level of education ranged from less than 10 years at school (10%) to 2 or more years post-school qualifications (56%). Most of the respondents were employed on a full-time basis (65%) and indicated that their spouses were also full-time employed (68%). Respondents also presented information regarding their deaf children. A summary of information on the respondents' deaf children follows in Table 2 (at end of article).

Ages of the children ranged from 2 to 6.11 years, which is typically the age of preschool children. Most of the children's deafness was diagnosed prior to the age of 2 years, although there were still instances of late diagnosis after 3 years of age. Parents indicated that they used a range of communication modes when communicating with their deaf children, with speech and gesture appearing as the most used means of communication. Most of the deaf children used some means of sound amplification with only two children not using hearing aids or cochlear implants.

Measuring Instrument

A questionnaire was designed and developed based on two studies: first, research by Light and Kelford-Smith (1993), which compared the home-based literacy experiences of children who use augmentative and alternative communication and their typically developing peers with reference to three literacy-related contexts and second, research by Heinemann-Gosschalk and Webster (2003), which considered literacy and the role of parents with reference to the effective partnerships between families and schools. Table 3 (at end of article) presents a breakdown of the questionnaire content. The number of questions in the four different sections is presented and the focus of the various questions is indicated.

Procedures for Data Collection and Analysis

Following parental consent, questionnaires with a letter providing guidelines for questionnaire completion were addressed to each parent. The researcher delivered the questionnaires for children to take home, requesting return to school within one week. The completed questionnaires were collected from the schools at pre-arranged times. Additional efforts were made to involve those parents who failed to return the questionnaires. This involved telephonic follow-up when the questionnaires were not returned to the school within 1 week of distribution. Data presented were coded and prepared for statistical analyses. Categories for open-ended questions were determined

and coded under the guidance of a statistical advisor and a statistician. Data analysis involved the use of descriptive statistics to analyze the data obtained from the questionnaires with the specific purpose of answering the research questions.

Results and Discussion

The results presented are based on parents' perspectives of their deaf children's literacy development and discussed with reference to the four literacy contexts identified. Firstly the affective and educational contexts are described, as these highlight the priority parents afforded to literacy events in the home and the responsibility they assumed in this regard. The support parents received from school personnel is also discussed. Regarding the physical context, the results are presented in terms of interaction patterns of parents, children, and siblings regarding literacy activities such as reading and writing. Parents' perceptions are also discussed in terms of their perceived satisfaction with their ability to provide home based interactions which facilitate literacy development for their deaf children.

The Affective Context

Parental priorities and expectations regarding literacy activities are powerful predictors of children's reading achievement (Light and Kelford-Smith 1993). The data presented in Fig. 1 (at end of article) highlights parental priorities regarding their deaf children's language and literacy development.

Results as reflected in the above figure indicated that parents regarded the importance of speech, spoken language development and interaction with friends higher than literacy development. Use and understanding of sign language were not considered important, in spite of the fact that many of these children were in bilingual (speech and sign language) educational settings.

When parents were asked to indicate why they rated certain aspects of development as important, they referred mainly to the importance of speech and language acquisition as the means to ensure children's ability to function independently and successfully in the hearing world. Parents felt that placing emphasis on the communication skills would best serve their children in reaching this goal. Parents also stated that they preferred the child not to use sign language as other family members would not be able to understand the child and that they would in all probability not be able to attend sign language classes. Together with this orientation, the primary responsibility of teaching their deaf children to read and write and sign was thus assigned to teachers by 93% of the respondents. These observations are of concern, as Morrow (1993) stated that the emotional and motivational contexts reflect parents' attitudes toward literacy. From these data it would appear as if parents still view reading and writing as a set of mechanical skills that have to be taught within the educational context rather than as a sociointeractive

process as indicated by Teale and Sulzby (1986), in which literacy development occurs simultaneously with language development. This has obvious implications for literacy exposure in the home. Parents need to understand the reciprocal relationship between language and literacy development rather than view language development as a precursor to literacy development. If parents do not highly prioritize acquisition of reading and writing skills in the same way as they prioritize interaction and communication, a nurturing climate for the development of these skills cannot be provided.

The Educational Context

When parents were asked to indicate the support and guidance they received from their children's schools, it became clear that parents did receive some information from educational specialists regarding literacy activities. Advice included information on how to read and which books to read to their children, as well as on communication methods to use when reading to their deaf children at home, as can be seen in Table 4 (at end of article).

From these findings it is interesting to note that 77% of parents did receive individual advice from the teacher on how to read to and communicate with their children within the home context, but only 35% had attended workshops to demonstrate these methods. 42% of the parents were not involved at all in setting individual teaching targets for their children's literacy development, within the school context.

When interpreting these questions together with the findings discussed above, it is evident that there is a need for a triadic approach to early literacy, in which early literacy development of the young deaf child must include the parent (and other literate role models within the home environment), the deaf child and the educational context (teachers and therapists). Continuation between these different environments is pivotal in facilitating acquisition of literacy skills by the deaf child.

The Functional Context

Results indicated that the families in this survey were actively involved in their own daily reading and writing activities. Deaf children were therefore exposed to good literacy models and could observe how literacy functions as part of everyday life. Parents reported that a wide range of reading and writing materials were available within the homes, which indicates that these parents are able to create a 'literacy-rich' environment (Morrow 1993). Parents in this study were readers themselves, which might have helped them to engage their children in book reading activities.

The Language Context

The nature of participation in literacy activities and the communication interaction between hearing parents and their deaf children around text-related activities are presented in Table 5 (at end of article).

From the above table it is indicated that parents defined their role in story reading activities with a high degree of directive interaction, which focused on information sharing rather than meaning development within the story context. Parents often pointed to pictures while telling the story and labeled pictures or asked children to label and point to pictures while telling the story. Interaction within this group of parents appears to generally involve more adult control over turn-taking and the topics of conversation, with deaf children taking fewer initiatives and receiving more directives, questions, and imperatives. It is well-documented that adult interactive behavior has a significant impact on children's reading responses, and that deaf children will engage more frequently in conversation around text when approached with low control strategies (Webster and Heinemann-Gosschalk 2000).

It is also interesting to note how parents describe their deaf child's communication behavior during reading activities (see Table 6 at end of article). Only 31% of parents reported that their deaf child had an attentive listening attitude during story reading activities. The highest percentages of reported communication behavior included the use of facial expressions and body movements, looking at and pointing to pictures, together with some use of gestures and vocalizations to answer. These observations are consistent with the findings of Williams (2004), who found that deaf children used facial expression, gesture, and pantomime as a means of communicating experiences.

The main modes of communication which children used can thus be described as non-linguistic; in other words, symbols employed are not part of a language system. As such, the representational range is limited. It is therefore not surprising that the child's role is perceived to fall largely at the level of sharing information, rather than at the level of developing meaning. The predominantly non-linguistic modes of communication used would hardly afford a child the ability, for example, to guess what happens next, as expressing such a prediction would require a way of communicating on an abstract and decontextualized level.

The fact that primary focus is placed on conveying information through very elementary visual means such as pointing to pictures is hardly surprising, if one takes into account the percentage of parents who are able to communicate with their deaf child about the context of the story, using linguistic means of communication only (speech and/or sign language). From Table 2 it is clear that 59% of parents employ non-linguistic communication (gestures) in their communication with their children (albeit sometimes in

combination with linguistic modes). Furthermore, findings from the affective context indicated that parents prefer their children not to use sign language, in spite of the fact that many of the children were exposed to sign language in their educational contexts. This finding is consistent with the research findings of Joseph and Alant (2000), where mothers of deaf children using sign language described themselves as less proficient signers than their children, with very small sign vocabularies (65% of the sample had a sign vocabulary of 20 or less words). Parents participating in the study also reported limited opportunities for learning signing. The study by Joseph and Alant (2000) was, however, conducted in a more impoverished rural setting in South Africa.

The nature of the communication between parents and children influences the quality and quantity of language the children receive during story reading sessions. In response to a question on the favorite activities of the children, a higher percentage of parents reported that looking at books was a favorite activity of the children as compared to reading with an adult as a favorite activity (see Fig. 2 at end of article). It would appear that the focus remains on visual aspects of the activity to create shared meaning, rather than on linguistic aspects.

Differentiation between looking at books and reading may again be related to the communication barriers that exist between hearing parents and their deaf children. Webster (2000) explained that due to the problems of constructing a shared language with other hearing family members, "the majority of deaf children may not have the same opportunities to converse about picture books or to acquire concepts and structures of stories" (p. 136). However, shared book reading as opposed to looking at books remains a powerful tool for emergent literacy development because it is a context that is meaningful, interesting, and motivating to the preschool child. Watson (1999) emphasized that an understanding of books and story structure can be made accessible to deaf children. Parents therefore need to be encouraged to move beyond simply looking at pictures and naming objects to presenting story structure to their deaf children.

The role of siblings in literacy related activities was also considered. The nature of sibling participation in literacy activities is presented in Table 7 (at end of article).

According to the parents, sibling interaction between hearing children and the deaf child mostly involved drawing and interaction around drawings (62%). In addition, parents reported that older hearing siblings seldom read stories to the deaf child. It appears that the hearing siblings preferred engaging in less demanding activities in terms of language and communication.

Conclusions and Implications for Further Research

Results highlighted positive as well as concerning aspects about the literacy contexts these preschoolers are exposed to within the home environment. Regarding the functional context, parents of deaf children in the present research served as adult literacy role models for their children as they frequently engaged in reading and writing activities in the presence of their children. Deaf children also observed other family members engage in literacy related activities and participated with siblings and other family members in this regard. The deaf children's literacy environment was further enriched by the availability of a variety of reading and writing materials and the fact that most of the children in this sample had their own books and favorite texts.

Regarding the educational context, parents in general had received some individual guidance related to facilitating literacy experiences at home. Only 58% of parents, however, were involved in setting learning goals for their child's literacy. Similarly, parents generally perceived the child's literacy education to be primarily the teacher's responsibility, as rated under the affective context.

Regarding the affective context, parents further indicated that spoken language and communication development in their deaf children are of higher priority than the acquisition of literacy skills. This may be related to the emphasis on language acquisition and communication in the early intervention programs of deaf children. In this context, the need for literacy and language development to be viewed as two sides of the same coin becomes apparent. It thus appeared that parents were not fully aware of the role of emergent literacy as part of the development of the young deaf child.

The parents in this survey did not regard the use and understanding of sign language as a priority in their deaf children's development even though many of the deaf children used sign language as a mode of communication. Parents' reported low regard for sign language is consistent with the findings from the language context, highlighting the communication difficulties between the parents and the deaf children during literacy-based activities.

Regarding the language context, which described linguistic and interactive patterns around literacy related activities, the results indicated that not all parents in this sample regularly read to their children and that the deaf children generally preferred to look at books on their own rather than being read to by an adult. Siblings of the deaf children showed preference for literacy-based interactions with the deaf child that were communicatively less demanding. It was thus concluded that the language and communication difficulties that exist between parents, family members and the deaf child seemed to have an impact on the nature of interaction during text-based interaction.

From the information provided by parents, the limitations in text-based interaction between parents and deaf children were evident. Due to the nature of the deaf child's language and communication development, parents cannot map text-based activities on an established language (Swanwick and Watson 2005). Based on the results obtained in this survey, it is suggested that the quality and quantity of language that deaf children in this sample were exposed to during literacy-related activities, may not meet the demands of the children's early literacy needs.

In summary, although the parents who participated in the current study provided a good literacy environment for their children in some respects, they appeared to have limited insight into the language and literacy needs of their children. The research has identified potential weaknesses in the literacy-based interaction between the hearing parents and their deaf children. It is suggested that in an attempt to address the literacy needs of deaf children, more emphasis is needed on the early acquisition of literacy skills and the specific role that parents have to play in engaging in meaningful text-based interaction with their children in a literacy-rich environment with high expectations for literacy development. Parents also need to be sensitized to the role of sign language in the language and literacy acquisition of their deaf children.

Further research is needed in terms of understanding the needs and expectations of hearing parents using sign language in literacy-based interaction in order to highlight the difficulties parents may experience within this context. A future study could investigate the extent to which the information and guidance provided by teachers fulfill parents' needs for information regarding literacy-based interaction with their young deaf children. Furthermore, investigation into the extent to which the use of graphic symbols used in augmentative and alternative communication could enhance the deaf child's understanding and participation with adults in text-based literacy activities such as reading, may be beneficial.

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Table 1 Background information on respondents who completed the questionnaire

Parameter addressed	Results obtained from 29 respondents, <i>n</i> (%)	
Respondent's relationship to the deaf child	Mother	19 (66)
	Father	5 (18)
	Both parents	1 (3)
	Other relatives (grandmother, uncle or aunt)	4 (13)
Age of respondent	20–30 years	4 (14)
	31–40 years	18 (62)
	41 and older	7 (24)
Marital status	Single	7 (24)
	Married	22 (76)
Level of education	Less than 10 years at school	3 (10)
	10–12 years at school	10 (34)
	Post school qualifications 2–3 years after school	16 (56)
Respondent's employment status	Unemployed	8 (28)
	Part-time employment	2 (7)
	Full-time employment	19 (65)
Respondent's spouse: employment status	Unemployed	3 (12)
	Part-time employment	5 (20)
	Full-time employment	17 (68)
Home language	Afrikaans	6 (21)
	English	15 (52)
	African languages (Setswana/Sotho/Tsonga/Venda/Zulu)	8 (27)
Other languages used at home	Afrikaans	4 (13)
	English	10 (34)
	Sotho	3 (10)
	Sign language	8 (28)
	Other European languages (Polish)	1 (3)
	No other languages used	9 (31)

Table 2 Background information on the deaf children who met selection criteria

Parameter addressed	Results obtained from 29 respondents	
Age of the deaf child (Age range: 2–6.11 years) (Mean age: 4.4 years)	2–2.11 years	1 (3%)
	3–3.11 years	8 (28%)
	4–4.11 years	4 (14%)
	5–5.11 years	10 (34%)
	6–6.11 years	6 (21%)
Child's age at diagnosis of deafness	0–12 months	10 (36%)
	13–24 months	11 (39%)
	25–36 months	3 (11%)
	After 3 years	4 (14%)
Respondent's communication with the deaf child	Speech only	6 (21%)
	Sign only	1 (3%)
	Speech and sign	5 (17%)
	Speech and gesture	10 (35%)
	Speech, sign and gesture	7 (24%)
Amplification systems used by the deaf child	Hearing aids	19 children
	Cochlear implants	11 children
	FM systems	4 children
	No amplification systems used	2 children

Table 3 Description of the questionnaire content

Questions	Focus
Physical and functional context: reading	
Questions 1–11	The questions in this section focus on the extent to which reading material is available in the home as well as on the family and the child's reading activities. Questions deal with the deaf child's favorite activities, the child's use of printed materials, and the child's interest in reading activities and participation in book-related activities. Questions also focus on preferred story reading times, the child's favorite books and the frequency of story reading activities within the home.
Physical and functional context: writing	
Questions 18–22	These questions focus on the extent to which writing materials are available in the home and on the writing activities of the family. The deaf child's interest and participation in writing activities are also questioned.
Language context	
Questions 12–17 and 23–25	These questions focus on the social interaction between parent and child during literacy events, with a specific focus on story reading. It questions the types of books the child reads, the communication during story reading activities, the positioning of the child during reading and the extent to which the child enjoys these reading activities. The family and siblings' participation in reading and writing with the deaf child is included.
Affective context	
Questions 26–27	These two questions deal with priority afforded to literacy events within the home and the responsibility parents assume in this regard.
Educational context	
Questions 28–29	These questions focus on parent–school collaboration in the deaf children's emergent literacy development. It deals with parental experiences in reading to their deaf child and the literacy-related advice and services parents receive from their child's school.
General	
Question 30	This question invites comments and observations from parents.

Adapted from Light and Kelford-Smith (1993) and Heinemann-Gosschalk and Webster (2003)

Table 4 School based support services available to parents of deaf children

Parental support services	Available (<i>n</i> =26), <i>n</i> (%)	Not available (<i>n</i> =26), <i>n</i> (%)
Individual advice from teaching staff on reading methods to use with the deaf child at home	20 (77)	6 (23)
Individual advice on communication methods to use while reading at home to the deaf child	20 (77)	6 (23)
School based group workshops demonstrating reading methods with deaf children	9 (35)	17 (65)
Teaming with school professional in setting individual teaching target for deaf child's literacy support	15 (58)	11 (42)

Results calculated from *n*=26 as 3 respondents did not answer this question

Table 5 Communication interaction roles by hearing parents and their deaf child during text activities

	Adult role, <i>n</i> (%)	Child role, <i>n</i> (%)
Sharing information	Points and labels	18 (62)
	Requests label	17 (59)
	Quietly look together	8 (28)
Developing meaning	Request story sequence	6 (21)
	Request explanation	6 (21)
	Finger spells important information	5 (17)
	Read text	8 (28)
	Tells story in own words	2 (7)

Respondents were permitted to present multiple responses to these questions.
Percentages calculated from *n*=29 are presented in parentheses

Table 6 Deaf children's communication during story reading activities

Mode of communication	Parents' indication of their deaf children's communication during story reading, <i>n</i> (%)
Facial expressions and body language	17 (59)
Gestures and pointing	13 (45)
Vocalisation	11 (38)
Speech	10 (35)
Sign language	9 (31)
Sign and speech	5 (17)
Signs and vocalisations	5 (17)
No communication	1 (3)

Respondents were permitted to present multiple responses to this question.
Percentages calculated from *n*=29 are presented in parentheses

Table 7 Sibling's participation in reading and writing activities with the deaf child

Activities	Sibling participation in reading and writing, <i>n</i> (%)
Siblings draw with the deaf child and interact around and talk about the drawings	18 (62)
Siblings act out stories for or with the deaf child	8 (28)
Siblings read to the deaf child	6 (21)
Siblings sing nursery rhymes to the deaf child	4 (14)

Respondents were permitted to present multiple responses to this question.
Percentages calculated from *n*=29 are presented in parentheses

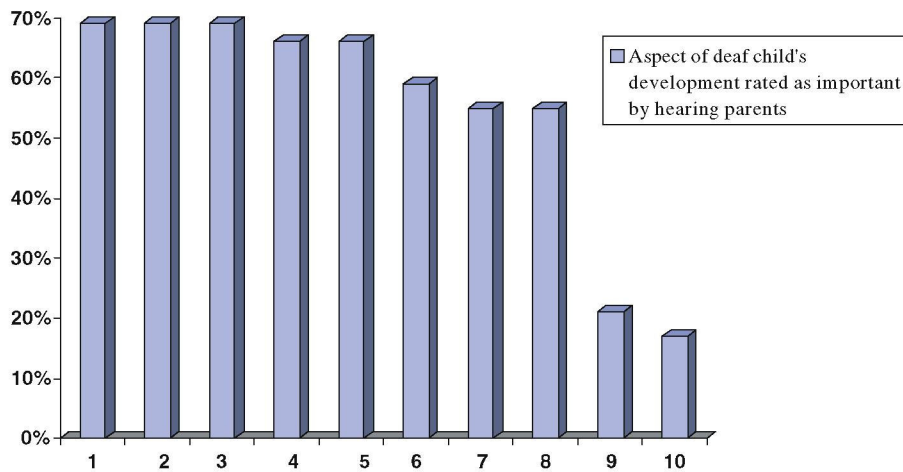


Fig. 1 Parental ratings of the most important aspects of their deaf children's development. Percentages calculated from $n=29$. 1 Speech development 20 (69%), 2 use of spoken language 20 (69%), 3 making friends 20 (69%), 4 spoken language comprehension 19 (66%), 5 exposure to books 19 (66%), 6 ability to communicate 18 (62%), 7 learning to read 17 (59%), 8 learning to write 16 (55%), 9 use of sign language 6 (21%), and 10 understanding of sign language 5 (17%)

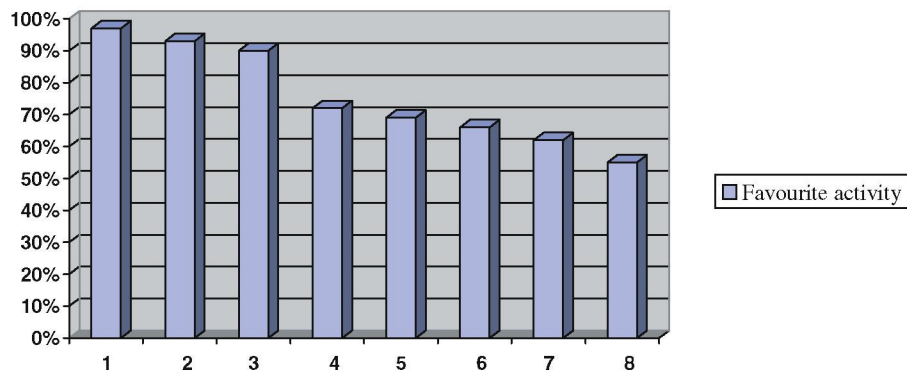


Fig. 2 Deaf children's favorite activities as reported by their parents. Percentages calculated from $n=29$. Respondents were permitted to indicate multiple responses to this question. 1 looking at books 28 (97%), 2 playing outside 27 (93%), 3 watching TV 26 (90%), 4 playing inside 21 (72%), 5 drawing with others 20 (69%), 6 drawing alone 19 (65%), 7 sport 18 (62%), and 8 reading with an adult 16 (55%)