Provisions That Facilitate Literacy Development among Learners with Hearing Impairments

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Abstract: **This paper is part of a broad study that looked at the impact of hearing loss on literacy skills development. The paper explores the role of the home and the school in the development of literacy skills among learners with hearing impairments. The study employed mixed methods where both qualitative and quantitative techniques were used. However, the case study design largely underpinned the study. The representative sample was composed of five educators (two teachers and three administrators) and 10 parents who were conveniently selected. Questionnaires, interviews and observation were the data gathering tools used. The results showed that no workshops were ever held to staff develop teachers on the teaching of students with hearing impairment. There was also no meaningful communication and direct contact between teachers of the deaf and parents of deaf children. The present curriculum does not support both English and Zimbabwe Sign Language needed for literacy development in student with hearing impairments. The study recommended that educators must be provided with solid training in Special Needs Education, at both pre-service and in-service levels. It was also recommended that Language development should be the primary consideration when teaching students who are pre-lingually deaf (either born deaf or became deaf before acquiring language).**

Keywords: **literacy development, hearing impairment, sign language, deaf, educators.**

I.   INTRODUCTION

Literacy provides students with hearing impairment with opportunities to enter the world of literature and enjoy videos, television with captioning and other forms of entertainment with their hearing peers. It allows them to access information through all types of media. Opportunities to read and enjoy books alone, with friends or with teachers are important learning experiences for all students. Exploring the written word through drawing and writing also benefits all students (Briggle, 2005). Children who are hearing impaired, like their hearing peers, participate in literacy events and use written language in many typical ways. The current situation in which, learners with hearing loss experience difficulties in achieving normative standards of literacy in spoken and written language, is not new. However, as already stated, the consequences of low literacy skills for people with hearing impairment this digital era are far graver than at any other era. High levels of literacy achievement are now more important than ever before. Literacy skills have become central to the daily communication and information requirements of students with hearing impairment. Leigh (2000) noted that, for most individuals with hearing impairment, access to telephone communication is via a text message in a cellular-phone. In these situations, communication is totally dependent upon their literacy skills and those of their communication partners who, in a large percentage of cases are deaf themselves.

Similarly, in regards to news and information on public affairs, a strong dependence on literacy skills is again evident. In a society where so much information is conveyed through the electronic media, this represents a very high degree or reliance upon print-based media. Strong literacy skills are also needed to allow students with hearing impairment to

complete in the job market. Students with hearing impairment, who use sign language to communicate, live and interact in an English speaking world. They are expected to read and produce English in assignments at school. Students with hearing impairment are required to be functionally bilingual to effectively participate in their community. However, literacy development in students who are impaired is a multifaceted issue. Literacy achievement in a spoken and written language is a challenge for students with hearing impairment (Rottenberg and Scarfoss, 1992).

1.1 Statement of the Problem

Students who are deaf experience poor reading and writing performance in schools (Padden and Ramsey, 1993). There are reported significant lower levels of attainment in literacy in students with hearing impairment when compared with their hearing age peers. Most students with hearing impairment in Zimbabwe today (roughly 80 percent) are placed in a mainstream school environment, that is, in integration units hearing peers and teachers (Salend, 2001). As students with hearing impairment are increasingly being educated in mainstream public school programs and are required to be functionally bilingual to effectively participate in their community, there is a need to critically analyse the factors affecting literacy development as these factors affect the student's educational success.

1.2 The Research Question

Are there any literacy provisions that have been put in place to facilitate literacy development of students with hearing impairment in resource units?

1.3 Delimitation of the Study/ Scope

The study focused on factors affecting literacy development in students with learning impairments who are in an integration unit at primary school level. Out of the two primary schools with integration units of students with hearing impairment in Epworth- Mabvuku/Tafara District in Harare, the research was carried out at Epworth Primary School in Epworth, a township located North-East of the capital city, Harare . The community that makes up the township is of different cultural groups, the Shona, Ndebele and Deaf. Furthermore, these students with hearing impairment that are enrolled in this school are neither of English nor part of the Deaf cultural group.

1.4 Theoretical Framework

Theoretical framework which informed this study emerged from the socio-cultural model of literacy development relating to students who are hearing impaired and with limited English proficiency. According to Rodda and Eleweke (2000), in socio-cultural model, it is considered that people who are deaf have a culture and language different from hearing people and are linguistic minorities for whom the learning of English literacy skills must be considered a second language learning.

II.   LITERATURE REVIEW

2.1 Literacy Development (conceptual definition)

Literacy has been commonly defined as the ability to read and write at an adequate level of proficiency that is necessary for communication (http://issues.tigweb.org/literacy downloaded on 29-10-2011). For hearing children, who speak the language of instruction in their school, the task of learning to read means decoding a language they already know. Children learn to decode (read) and encode (write) words that, for the most part, they understand. They usually develop their emergent literacy skills working with concepts and contexts that are very familiar to them, including home, family, and the neighbourhood (Chamberlain and Mayberry, 2000). However, for children with hearing impairment, reading and writing have long been the techniques used to teach them language (Gioia, Johnston, and Cooper, 2001). Therefore, for children with hearing impairment, reading isn't decoding a language they know; instead it is very often the vehicle for learning English. While reading instruction for students with hearing impairment has moved away from the model that taught English through reading, this does not mean that students who are deaf do not learn English through reading. Gioia, Johnston, and Cooper (2001) revealed that students who are deaf must learn to read and English while they are still learning English. Students who are deaf and who read a lot better and their English improves (Kuntze, 1998). There is a

cyclinical aspect to the reading process. By reading, the reader learns more about English, more vocabulary, more grammar, and so on. Thus the two processes, reading English and learning English, are entwined for learners who are deaf. Furthermore, skilled readers who are deaf continue to use reading to build their English language skills. Marschark and Harris (1996) also describe a phenomenon they call 'reciprocal caution' which is although more reading helps readers improve, poor reader can't improve by reading because reading is such a difficult task. Language acquisition and literacy development are inextricably linked processes, particularly in the education of students with hearing impairment. It is important to consider the fact that learning to read is a language process, and children don't learn to read if they don't have a language in place.

2.2 Provision optimal for the development of literacy in students with hearing impairment.

2.2.1 Language as a foundation for literacy

Mildred Groht (1955), cited by Garner (20030, wrote that reading should be built on a foundation of spoken language, recognizing that language acquisition should precede reading development for children who are deaf, just as it does for hearing children. While it is known that hearing loss leads to language deprivation, it is important to consider the fact that learning to read is a language process, and children do not learn to read if they do not have a language in place (Garner, 2003). Language acquisition and literacy development as already stated that are inextricably linked processes particularly in the education of students with hearing impairment.

Reading requires two related, but separable, capabilities: (1) familiarity with a language, and (2) understanding the mapping between that language and the printed word (Chamberlain and Mayberry, 2000). Children who are profoundly deaf are disadvantaged on both counts. Not surprisingly, then, reading is difficult for children who are profoundly deaf. But some children who are deaf do manage to read fluently. How? Are they simply the smartest of the crop, or do they have some strategy, or circumstance, that facilitates linking the written code with language? A priori reason one might guess that knowing Sign Language would interfere with learning to read English simply because Sign Language does not map in any systematic way onto English. However, recent research has suggested that individuals with good signing skills are not worse, and may even be better, readers than individuals with poor signing skills (Chamberlain and Mayberry, 2000). Thus, knowing a language (even if it is not the language captured in print) appears to facilitate learning to read. Nonetheless, skill in signing does not guarantee skill in reading, reading must be taught.

Learning to read and write, even in a perfect alphabetic writing system, would still depend on having the oral language with which to understand the morphemes and it would still depend on being able to connect letter sequences to their pronunciation. Sounding out is based on the assumption that children know the meanings of the words they are decoding. Phonics works only if the string of produced letter sounds approximates a recognizable word (Juel, 2006). Even for hearing children who are learning English as a second language, the basic argument is that it is very difficult to learn to read and write a language that is unfamiliar in its meaning and sounds and that for literacy development there needs to be at least minimal familiarity with the target language, although how familiar is unclear (Foorman, Goldenberg, Carlson, Saunders, and Pollard- Durodola, 2004). This raises questions as to what level of English fluency (in speech and / or sign) is necessary as a precursor or concomitant condition to help ensure that children with hearing impairment will be successful at learning to read and write. For all beginning literacy learners, written text and face-to-face language must come to make sense in terms of each other, constituting a symbolic relationship that young children need to unravel (Homer and Oslon, 1999). Hearing children do this by using the structure of their speech as the fodder for making sense of text and in turn, the text provides a model of rethinking the nature of the spoken language (e.g., the concepts of word and letter). There are ways as stated by Olson (1994), in which print brings spoken language into consciousness, thus helping the younger reader and writer make the connections between the two.

2.2.2   Interactive language in literacy development

An extensive body of research on early language and literacy development, including literacy development in low-income and minority families has identified the features of home literacy environments that result in school literacy (Dickinson and Tabor, 2001). Without this early scaffolding, which is also linked to home through support from their families, children with hearing impairment can not thrive. When the early literacy experiences of learners who are deaf are postponed, it will be difficult for those students to ever attain grade level literacy skills in English (Erting, 2003).If bilingual approaches can be effective, they need to be embedded in the earlier caretaking experiences so that they prevent

a delay in literacy learning for children who are deaf (Erting, 2003). However, far too often, children with hearing impairment do not acquire sufficient language interactions that are crucial for building literacy. Children with hearing impairment must engage in sustained interactive discourse with fluent adults inorder to lay the foundation for literacy (Erting, 2003) and this is no different from what hearing children need (Dickinson and Tabor, 2001).

2.2.3 *Exposure to accessible language*

Visual language, according to Kuntze (1998), makes language accessible to children who are deaf and students who are deaf are often described as visual learners. Sign Language is described as a language that is biologically suited to learners who are deaf (Kuntze, 1998). Marschark and Harris (19960 stated that young deaf children's early access to an environment that combines sign in any form (i.e. Manually Coded English , MCE, or Sign Language) and experiences with English facilitate the child's later success in reading. Rich preschool experiences are critical for all young learners, and without them, literacy development of learners with deafness is adversely impacted. The young child with deafness, who is deprived of early exposure to accessible language input from fluent language users, may never catch up and never develop age level English literacy. Therefore one reason so many children with hearing impairment lack English literacy is the fact they have limited exposure to an accessible language as infants and toddlers.

III. METHODOLOGY

The study employed mixed methods where both qualitative and quantitative techniques were used. However, the case study design largely underpinned the study. In this case the single unit of study was an institution, Epworth Primary School Integration Unit. As stated by Merriam and Simpson (1984), a case study tends to be concerned with investigating many, if not all, variables in a single unit. In this case study of Epworth Primary School Integration Unit, both the two teachers of students with hearing impairment in the Integration Unit, together with their three supervisors, the school head, deputy and teacher in-charge were part of the population. All the sixteen parents and caregivers of the students in the integration unit also constituted the population. Of the two integration units of students with hearing impairment at primary level in Epworth – Mabvuku/Tafara District, the Epworth Primary School Integration Unit was purposively selected for the study because it exhibited characteristics of interest to the researcher. It was the integration unit of students with total hearing loss that was so severe that they could not process linguistic information through hearing, with or without amplification. All the five educators (two teachers and three administrators were made part of the sample due to small numbers. Convenient sampling was used to select 10 parents from the 16 parents. Questionnaires, interviews and lesson observation were the data gathering tools used. A pilot study was carried out at one of the primary schools with an integration unit in Hatfield. The five respondent educators who participated in the pilot study were selected by convenience and were not included in the main research. The researcher also pilot-tested the interview research questions scheduled for parents of student who are deaf on four parents of children with hearing impairment who had come to fetch their children home after school. These parents were also not included in the main research.

IV. RESULTS

4.1 Demographic Data

Table 4.1: Characteristics of the two classes

Class Code	A	B	Total	%
No of Boys	6	5	11	58
No. of Girls	5	3	8	42
Total Enrolment	**11**	**8**	**19**	**100**
Male Teachers	0	0	0	0
Female Teachers	1	1	2	100
Total No. of Teachers	**1**	**1**	**2**	**100**
Teacher: Pupil Ratio	**1:11**	**1:8**	**1:10**	

The striking feature of table 4.1 is the high teacher: pupil ratio of Class A.
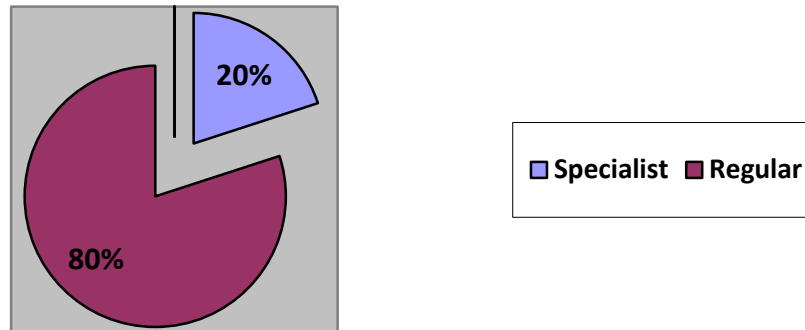
Figure 4.1: Distribution of Educators by Professional Qualification

Figure 4.1 indicate that all educators were qualified teaching professionals. However only one teacher was a specialist educator and the rest were regular educators
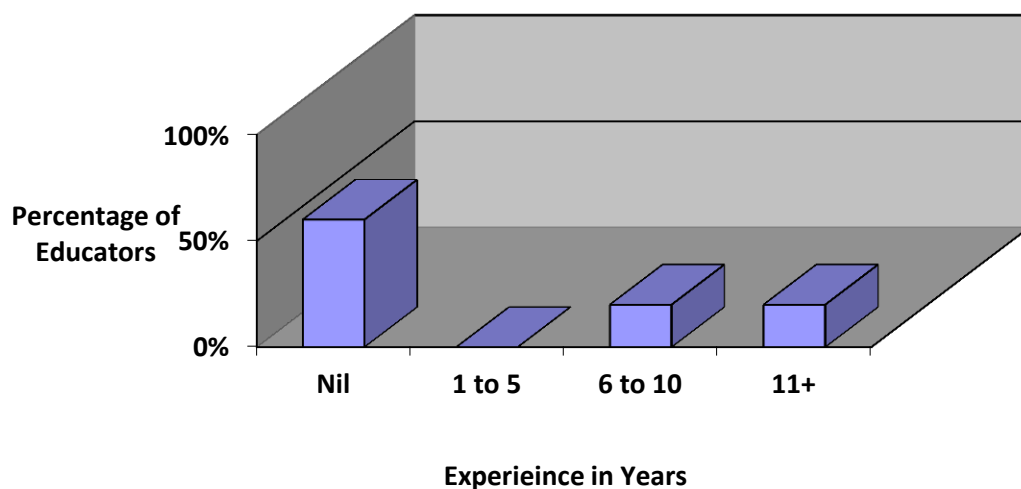

Figure 4.2 Experiences in Teaching Students with Hearing Impairment

The striking feature of figure 4.2 is the vast experience of educators in teaching students with hearing impairment but without training in Special Needs Education

4.2 Provisions that facilitate Literacy Development

The key research question sought to find out if there were any provisions that had been put in place to facilitate literacy development. It also sought to find out how competent the educators were in Zimbabwean Sign Language not only to teach it but to use in curriculum delivery.

Table 4.2: Responses on the availability of provisions for literacy development

(N=15)

Provisions for literacy Development	Responses				Modal Response
	Yes	No	Yes	No	
a) Are there any Government initiated public awareness campaigns in your area to promote Special Needs Education of Students with hearing impairment	0	0	15	100	N0
b) Are there any pre-school services that are being offered to children with hearing impairment in your area?	0	0	15	100	No
c) Are you proficient in Zimbabwean Sign Language	2	13	13	87	No
d) Did you get any support to learn Sign Language officially?	1	7	14	93	No
Aggregate					No

Table 4.2 indicates that the majority of educators is not proficient in Zimbabwe Sign Language and therefore faces difficulties interacting with students with hearing impairment.

Table 4.3: Educator's Responses on school environment that can promote literacy development

(N=5)

Provisions for literacy Development	Responses				Modal Response
	Yes		No		
	No.	%	No.	%	
a) Have you ever held any staff development workshop on the teaching of students with hearing impairment?	0	0	5	100	No
b) Have you ever had any workshop with parents of learners with hearing impairment?	0	0	5	100	No
c) Does the present curriculum support both English and Zimbabwe Sign Language needed for literacy development in student with hearing impairment?					
Aggregate					No

Table 4.3 above indicates that there are no internal and external educational support services to effectively enhance literacy development in integration units. The majority of educators felt that the curriculum did not support both English and Zimbabwean Sign Language needed for literacy development in students with hearing impairment.

Table 4.4: Data on Educational provision Preferred by Educators and Parents

(N=5)

Educational Provision	Educators		Parents		Total	
	No	%	No	%	No	%
Special School	4	27	4	27	8	53
Integration Unit	1	7	5	33	6	40
Regular Class	0	0	1	7	1	7
Total	**5**	**33**	**10**	**67**	**15**	**100**

Table 4.4 indicates that most educators and some parents preferred having children who are deaf taught in special schools to integration units.

Table 4.5: Educator's views on school environment that can enhance literacy development

(N=5)

Home and School literacy environments	Responses										Modal Response
	SD		A		N			D		SD	
	No	%	No	%	No	%	No	%	No	%	N0
a) Administrators in integration units do not have experience in teaching students with hearing impairment.	1	20	3	60	0	0	1	20	0	0	Agree
b) There are not enough monetary incentives to attract more educators (already practicing) to train in the instruction of children with hearing impairment.	4	80	1	20	0	0	0	0	0	0	Strongly Agree
c) Administrators in Integration Units need training in Special Needs Education to supervise the teaching and learning of students with hearing impairment.	3	60	1	20	1	20	0	0	0	0	Strongly Agree
d) Use of computers enhances literacy development of students who are deaf.	0	0	3	60	4	40	0	0	0	0	Agree
e) The parents' and educators' hearing status has a bearing on literacy development in students with hearing impairment.	1	20	3	60	0	0	1	20	0	0	Agree
Aggregate											Agree

There was an agreement to the assumption that administrators in integration units have no expertise in the teaching of students with hearing impairment and need to undergo Special Needs Education training. Most of the respondents agreed that the hearing status of educators and parents impacts negatively on literacy development of students with hearing impairment.

V.   DISCUSSION

Eighty percent of the respondent educators felt that the curriculum did not support both English and Zimbabwean Sign Language equally as needed for literacy development in the teaching of students with hearing impairment. From the observations and interviews carried out, it was established that there was no equal time allocation on the timetable to both languages. There was no formal teaching of Zimbabwean Sign Language as a subject like English. There were no materials that could be used in the teaching of Zimbabwean Sign Language. In Zimbabwe there is not much documentation in sign language except for the Zimbabwean Sign Language dictionary that can be used by specialist teachers to learn some signs.   However, the teachers of students with hearing impairment did not have the dictionary. They only had a few charts with signs and the alphabet as teaching material.

The study also established that there was no proficiency testing of Zimbabwean Sign Language at Grade 7 Public Examinations by Zimbabwe Schools Examinations Council (ZIMSEC). It was difficult for educators to assess the progress made by students in Zimbabwe Sign Language. Currently, much assessment carried out is inevitably based on procedures for considering the student's English language skills but this is not appropriate when considering students with hearing impairment. English assessment, for example, often focuses on use of tenses or proportions yet these are differently realized in Zimbabwean Sign Language.

Both parents and educators preferred haring students who are deaf receive their education in special schools. They felt that special schools had adequate resources needed for the education of students with hearing impairment compared with integration units in regular schools. Their perceptions of special school contradicted with Briggle (2005) who felt that students who are deaf can benefit from many of the literacy activities already in place within the regular education classroom. From the interviews with educators, Interview Item 4, it was established that there were attitudinal problems that impeded the literacy development of students with hearing impairment. The results established that these attitudinal problems emanated from socio-economic factors. 80% of the respondent educators strongly agreed that the socio-economic factors where a lack of monetary incentives to attract more (already practicing) regular teachers to acquire skills in the instruction of students with hearing impairment, traditional beliefs and misconceptions of deafness, society's lack of knowledge about socio-linguistic issues in general and deaf issues in particular. Sixty percent of the respondent educators agreed to the assumption that the hearing status of parents and educators had a bearing on literacy development of students with hearing impairment while 20% of them strongly agreed to the assumption. All the respondents were culturally hearing people who are not native signers and as a result a situation whereby students with hearing impairment were learning sign language from people who were learning it as well as created. This in turn impacted on the literacy development of students with hearing impairment. The only way these students can improve their signing is through interaction with their peers who are deaf also as suggested by Dickson (2001). Interactive language enhances literacy development (Erting, 2003).

REFERENCES

[1] Allen, T. (1986) "Parents of academic achievement in hearing impaired students:1983" In Schildroth, A. and Karmer, M. (Eds), Deaf Children in America (pp.161-206) San Diego, CA: College – Hill Press

[2] Bench, R.J. (1992) Communication Skills in Hearing Impairment Children. London: Whurr Publishing.

[3] Best, J. (1989). Research in Education, New Jersey: Prentice- Hall.

[4] Bloome, D. and Green, J. (1992). Educational contexts of literacy. Annual Review of Applied Linguistics. 12:49-70.

[5] Braden, J. (1994)   Deafness, Deprivation, and IQ. New York: Plenum Press.

[6] Briggle, S.J. (2005). Language and Literacy Development in Children who are deaf or hearing impaired Kappa Delta Pi Record (Online) Available url: http://www.readingrockets.org/atoz/

[7] Calderon, R. (2000) "Parent and Greenberg of child's language, early reading and social –emotional Development."

[8] Calderon, R. And Greenberg, M. (2000). "Challenges to parents and professional in promoting social- economical development in deaf children." In Spencer, P.E., Erting, C.J. and Marschark, M. (Eds), The deaf child in the family and at school: Essays in honor of Kathryn P. Meadow- Orlans (pp.167-185).   Hillsdale, NJ: Lawrence Erlbaum(2000)

[9] Carr, T. and Levy, B. (1990). Reading and its development: component skills approach New York: Academic Press, 1990.

[10] Chamberlain, C. and Mayberry, R. (2000) "Theorizing about the relation between American Sign Language and reading". In Language Acquisition by Eye. C. Chamberlain, C., Morford, J. and R. Mayberry, R. (Eds). Mahwah, NJ: Lawrence Erlbaum Association.

[11] Calderon, R. and Greenberg, M. (1993). "Considerations in the adaptation of families with school- aged deaf children." In Marschark, M. and Clark, D. (Eds). Psychological Perspectives on Deafness. Hillsdale, NJ Lawrence Erlbaum.

[12] Dickinson, D. K. and Tabor, P.o. (2001) Beginning literacy with language young children learning at home and school. Baltimore; Brookes.

[13] Erting, C.J. (2003). "Language and literacy development in deaf children: implications of a socio- cultural perspective." In: Bodner-Johnson B., Sass-Lehrer, M. (Eds). The Young Deaf of Hard of Hearing Child: a family Centred Approach to Early Education. Baltimore: Brookes.

[14] Ewoldt, C. (1991). "The early literacy development of deaf children." Moores, D. and Meadow- Orlans, K. (Eds), Educational and Developmental Aspects of Deafness. Washington, D.C. Gallaudet Press.

[15] Gall, D.M., Borg, W.R. and Gall, J.P. (1996) Educational Research: An Introduction (6th Edition) New York: Longman Publishers

[16] Gioia, B., Johnstone, P. and Cooper, L. G. (2001) "Documenting and developing literacy in deaf children". Literacy Teaching and Learning, Volume. 6, no, 1, p.1-22.

[17] Goldin- meadow, S. and Mayberry, R.I. (2001) "How do profoundly deaf children learn to read?" Learning Disabilities Research and Practice, Volume. 16 no.4, p.223-229.

[18] Greenberg, M. T. and Kusche, C.A. (1993) Promoting social and emotional development in deaf children: The PATHS project. Seattle: University of Washington Press.

[19] Gregory, S., Knight, P., McCracken, W., Powers, S and Watson, L. (1996) Issues in Deaf Education. London: David Fulton.

[20] Harris, M. and Beech, J.R. (1998) "Implicit phonological awareness and early reading development in prelingually deaf children." Journal of Deaf Studies and Deaf Education, Volume. 3, no.3 p.205-216.

[21] Hoffmeister, R. (2000). "A piece of the puzzle: ASL and reading comprehension in Deaf children". (Eds). In Chamberlain, C. , Morford, M. and Mayberry, R. Language Acquisition by Eye. Mahwah, NJ: Lawrence Erlbaum Assoc

[22] Horne, M.D. (1985). Attitudes Towards Handicapped Students: Professionals and Parent Reactions. Hillsdale, NJ: Lawrence Erlbaum Associates.

[23] Leedy, P.D. (1997). Practical Research: Planning and Design (6th Edition) New Jersey: Merril Prentice Hall.

[24] Leigh, G.R. (2000) "Principles and Practices of Literacy Development for Deaf Learners: A Historic Overview." Journal for \Deaf Studies and Deaf Education 5:1 Winter.

[25] Katasse, C. (1997). "Deaf children and English: More ways parents can help." Perspectives in Education and Deafness 15 (4): 4-5.

[26] Koskinen, P., Welch, O., Jensema, C., and Alexander, E. (1988). "Using captional television in classroom reading instruction." Teaching English to Deaf and Second- Language Students, 6 (1), 15-19.

[27] Knuckey, J. (2002) Information for Disability Liaison Officers, Centre of Excellence for Students who are Deaf and Hard of Hearing, NMIT.

[28] Leyser, Y. (1985) "Parents involvement in school: A survey of parents of handicapped students." Contemporary Education 57, 38-43.

[29] Marschark, M. and Harris, M. (1996). "Success and failure in learning to read: The special case of deaf children." In: Cornoldi C., Oakhill, J. (eds) Reading comprehension difficulties: processes and intervention. Mahwah, NJ: Erlbaum.

[30] Maxwell, M. (1985). "Some functions and uses of literacy in the deaf community." Language in Society 14 (2): 205-21.

[31] Mayer, C. and Wells, G. (1996). "Can the linguistic interdependence theory support a bilingual-bicultural model of literacy education for deaf students?" Journal of Deaf Studies and deaf Education Volume 1. No.2, p. 93-107

[32] McAnich, A.M. (1993). Teacher Thinking and the Case Method, New York: Teachers College Press.

[33] McEnany, G. and Wilson, H.S. (1993) Introducing Research in Social Sciences (2nd Edition). Redwood City: SAGE Publications.

[34] McMillan, J. H. and Schumacher, S. (1989). Research in Education. A Conceptual Introduction (2nd Edition) Virginia: Harper Collins Publishers.