Literary Review : Research about hard of hearing children

61% of deaf children have moderate and mild losses, Consortium of Deaf Education (CRIDE), 2012, with traditional practice being to exclude deaf children who fall into these categories from learning sign languages on the basis that they can speak and receive some speech sounds via technical aids or residual hearing. There is a blanket refusal by policy makers and educationalists to address the reality that deaf people are unable to hear all speech sounds with technical aids in group situations, even with adjustments to digital aids and classroom loop systems to try to eliminate the background "cocktail party" effect. One company claims that "*deaf children can hear every word*" even in open plan classrooms. There is lack of acceptance of reality at the "high power" about the fact that that all deaf children in education spend most of their days in group situations, whilst having to learn spoken languages. Furthermore, classroom loop systems to amplify sounds only enable communication between the teacher and deaf pupil and not the deaf child's hearing peers so a great deal of activity is missed by the deaf child.

The impact of not being able to hear sufficiently well in the school environment can have long term implications on the wellbeing and the safeguarding of deaf children. The Deaf E-Mainstreamers Group's (DEX) findings from its Best Value Review and literary review, *(Deaf Toolkit: Best Value Review of Deaf Education From Users' Perspective,* 2004) and its additional ongoing literature review and findings, are that the majority of deaf children are institutionally neglected as a hidden group whose needs are not being addressed appropriately. Not being able to hear what is being said in and outside the classroom, and the resulting fatigue, can domino-effect in behaviour problems, lack of concentration, feelings of inadequacy, fear and lack of control over one's environment, impacting on self-esteem, confidence and mental health. "*Always calculate*" is a major factor especially for English-using monolingual deaf children. DEX coined this concept to describe the daily struggle deaf children face in order to understand via lipreading, and listening via technical aids. It is akin to doing a mental crossword without a pen or paper, and having to try and work out what *will* be said in addition to what is being said in order to calculate and guess sounds or lip patterns that are unclear or missing.

DEX's edited personal accounts of being mainstreamed in education: *Between a Rock and a Hard Place: the deaf mainstream experience* (2004) demonstrates the problems deaf children have in accessing the national curriculum and the wider school curriculum and environment. Furthermore, not being able to access sign languages, this larger group of deaf children lose out on the benefits of having a motherese language which confers the linguistic identity, culture and sense of belonging and community that a language naturally provides.

This body of research collated by DEX is:

1. **General overview**

1. Some of the arguments for a monolingual approach for deaf or hard-of hearing children are similar to ones proposed some 30 thirty years ago (regarding hearing children) about how early exposure of two languages will result in children growing up with poor language skills. Findings and experience from Sweden do, however, indicate that deaf children educated bilingually academically perform very well.

Svartholm, K. 2006. *Review of FinSSL - Finland Swedish sign language*. Red. by Jan-Ola Östman. (Nordica Helsingiensia No. 4, Sign Language Studies No. 1.) Nordica, Department of Scandinavian Languages and Literature, University of Helsinki. Helsinki 2005. In: Language and style: Magazine for Swedish language research, NF 16, 2006, 219-223.

2. Abuse rates are higher among Deaf and hard of hearing children compared with hearing youths (25% more than hearing peers). The research also shows a direct correlation between childhood maltreatment and higher rates of negative cognition, depression and post-traumatic stress in childhood. This research shows that individuals who are active members of the deaf community report fewer depressive and post-traumatic stress symptoms.

Schenkel, Rothman-Marshall and Burnash, 2011. *Study: Abuse Rates Higher Among Deaf and Hard-of-Hearing Children Compared with Hearing Youth*. Presentation at Association of Behavioral and Cognitive Therapies, University of Rochester, USA.

3. Only 12% of deaf children are profoundly deaf. The remainder are “hard of hearing”.

Consortium of Research in Deaf Education, 2012 Survey: www.batod.org.uk/index.php?id=/resources/survey/CRIDE2012

4. The numbers of children with mild or minimal hearing loss greatly exceed those of children with severe or profound hearing loss. In fact, the numbers of children increase as decibel loss decreases.

Bess, F.H.; Dodd-Murphy, J; Parker, R.A. 1998. *Children with Minimal Sensorineural Hearing Loss: Prevalence, Educational Performance, and Functional Status.* Ear and Hearing Journal, Kluwer, Lippincott Williams and Wilkins.

(For further estimates, see *Bess, 1985; Niskar, Kieszak, Holmes, Esteban, Rubin, & Brody, 1998; Schein, 1996.)*

5. Children with mild and moderate hearing losses were called “forgotten” a quarter century ago.

Davis, J. (Ed.). 1977, 1990. *Our forgotten children: Hard-of-hearing pupils in the schools.* Washington DC: U.S. Department of Education. Available from Self Help for Hard of Hearing People, 7800 Wisconsin Avenue, Bethesda, MD 20814.

6. A mainstreamed deaf child is a "*lone wolf*" if educated without deaf peers and confidence and self-esteem is affected.

Mason D.G. 1997. *Mainstream Education and Deaf Students;* Canadian Annals of Education for Deaf and Hard of Hearing, Vol 23, 1997.

7. "I*t seems that deaf children in mainstream education often have few friends, have less interaction with hearing peers, and are more often rejected or neglected than their hearing peers. In addition, they may feel isolated and lonely*". For deaf children in a co-enrollment program (or resourced mainstream school with other deaf children in the UK) the image of social integration seems somewhat more positive. Co-enrollment classes include both deaf and hearing children who are co-taught by a general education and a special education teacher. In theory, co-enrollment programs provide the opportunity for intensive contact between deaf or hard-of-hearing children and their hearing peers in an environment where they are not the only deaf or hard-of-hearing child. In the very few co-enrollment programmes studied, mostly located in the United States, deaf or hard-of-hearing children did not seem to feel lonely or isolated, did not have a lower self-esteem, and did not differ from their hearing peers in how much their peers liked them.

Shirin, A., Jones, P., Luckner, J., Kreimeyer, KH., Reed, S. *Social Outcomes of Students Who Are Deaf and Hard of Hearing in General Education Classrooms*. Academic Journal Article. Exceptional Children , Vol. 77, No. 4.

8. Deaf and hard-of-hearing children to be neglected more often than their hearing peers and to have fewer friends in the classroom.

Nunes, T., Pretzlik, U. & Olsson, J. 2006. *Deaf children's social relationships in mainstream schools.* Deafness & Education International. Volume 3, Issue 3, pp 123–136.

9. And called "still overlooked".

Meadow-Orlans KP, Mertens DM and Sass-Lehrer M A, 2003. *Hard of hearing children: Still overlooked. Odyssey, Winter.*

10. The study focused on social competence (SC) and perceived sense of loneliness of preschool children with hearing loss (HL) in group inclusion (GI, a small group of children with HL is integrated in a standard classroom) and individual inclusion (II, each child with HL is individually integrated into a standard classroom). The relations between these factors and the child's speech intelligibility were performed. Sixty-four children aged 4–7 years participated: 22 from an II and 42 from a GI. SC, perceived sense of loneliness, and speech intelligibility were evaluated through the use of questionnaires completed by the preschool teachers. The results showed that the SC of children in II was higher than the SC of the children in GI, while interacting with normal hearing (NH) children. In GI, the children's SC with other children with HL was higher compared with their SC with NH children. In both groups, there were relationships between speech intelligibility and SC with NH children. In addition, in the II setting, there were relationships

between the speech intelligibility and the perceived sense of loneliness. These relationships were not found in the GI setting. The findings support the need for coenrollment of preschool children with HL and emphasize the crucial impact of speech intelligibility of children with HL on the success of their social enrollment with NH children, already at a young age.

Most, Tova, Ingber, Sara & Heled-Ariam, Einat - *Social Competence, Sense of Loneliness, and Speech Intelligibility of Young Children With Hearing Loss in Individual Inclusion and Group Inclusion*. J. Deaf Stud. Deaf Educ. first published online December 19, 2011.

11. Results of Gallaudet's National Parent Project - includes the responses of 404 parents of 6- and 7-year-old deaf and hard of hearing children to wide-ranging questions about their early experiences, and focuses on follow-up interviews with 80 parent respondents. The project suggests that many of their children were overlooked and neglected by professionals during the early years of their lives. Delay in identification - parents of hard of hearing children reported that their children's hearing loss was identified later than the hearing loss of deaf children and illustrates how children with a mild or moderate loss may escape identification for long periods, even when the family members are observant and their medical care is excellent. Parents report that even though hard of hearing children outnumber deaf children, they are less likely to receive services. The data suggest that parents of hard of hearing children do not feel as well served as parents of deaf children. These parents were much less likely to have received information about deafness or sign language instruction, or to have had opportunities to participate in parent groups. They were somewhat less likely to have received information on legal rights, behavioral development, and school choices, or to have had access to individual counselling. Paradoxically, the positive coping skills developed by hard of hearing children sometimes contributed to their difficulties. For those children whose loss is especially minimal, or whose loss is progressive (and does not appear significant during initial screenings), their remaining hearing and their own adaptive abilities often become their worst enemy, say some researchers. These children typically communicated very well in one-on-one and face-to-face interactions, and their good lipreading skills tended to mask the extent of their hearing loss, lulling parents and teachers into believing that they understood more than they did. Despite many advances in identification and intervention, hard of hearing children continue to be forgotten and overlooked in comparison to their peers with severe and profound hearing losses. To be "not deaf enough" subjects children and their parents to unnecessary disadvantages. Even assuming every hearing loss is identified at birth (or at the onset of the loss, if it occurs later), hard of hearing children face other difficulties if their needs are not met adequately. Professionals and parents "too often assume erroneously that once hard of hearing children are fitted with hearing aids, they will function like children without a hearing loss". Although technological helps have come a long way and have done much to help individuals to hear better, they have not solved the host of other problems associated with hearing loss.

Meadow-Orlans, Mertens, K.P. and Sass-Lehrer, M.A. - *Parents and Their Deaf Children: The Early Years.* 2003. Gallaudet University Press.

12. Despite dramatic improvements in identification, however, services for hard of hearing children have not kept pace with those provided to children with a profound hearing loss. Professionals, as well as parents, too often assume erroneously that once hard of hearing children are fitted with hearing aids, they will function like children without a hearing loss.

Yoshinaga-Itano, C., Sedey, A., Coulter, D.K., & Mehl, A.L. 1998. *Language of early and later identified children with hearing loss.* Pediatrics*. 103*, 1161-1171.

13. The problem is not that other professionals care less about children's opportunities to learn. The problem is that hearing loss is invisible, and minimal hearing loss seems as if it should be "insignificant." Therefore, hearing is an underestimated factor in a child's educational progression. By providing information about hearing and by advocating for and accessing the critically important auditory modality, we can help this neglected population of children with minimal hearing impairments succeed in a mainstreamed classroom.

Flexer, Carol. Reproduced with permission of Lippincott Williams & Wilkins from The Hearing Journal 1995;48 (9):10.

http ://www.audiologycentre.com/child_faq_management.htm

14. Children with hearing aids or unaided mild hearing loss may appear to hear conversation well, especially in one-to-one situations and when background noise levels are low. However children need to be able to hear soft speech and to be able to hear conversation all around them as well. Family adjustments are often required to meet the needs of the child or young person with mild/moderate hearing loss.

- While hearing technologies are very effective for children and young people with mild/moderate hearing loss, they may appear not to need them, and appear to “hear” without them. This can lead to confusion for them and parents and teachers.
- Children and young people with mild/moderate hearing loss have to use greater levels of effort than generally realised.
- Teachers often have a poor awareness of mild and moderate hearing loss and the steps they can take to minimise its impact. Parents may need to be particularly pro-active in ensuring their child is getting the support they need, including from specialists like Teachers of the Deaf and teaching assistants.

Archbold,S; Ng, Z.Yen; Harrigan, S; Gregory, S; Wakefield, T; Holland, L; Mulla, I.– *Experiences of young people with mild to moderate hearing loss: Views of parents*

and teachers. Ear Foundation report to the National Deaf Children Society, May 2015.

This is not a problem that can be solved by asking the children whether they can hear or not. “The person with the hearing loss is the worst judge of what he or she heard,” and “Our biggest problem is not what we don’t hear, but what we think we heard. For people who were born with a hearing loss, what they hear feels normal.”

Vesey and Wilson, 2003. Article on internet:

http://hearmehearmenot.files.wordpress.com/2008/11/navigating-the-hearing-classroom-with-a-hearing-loss.pdf

15. Study focusing on the social or behavioral status of hard of hearing children has reported severe problems for some children. In one study, parents characterized their hard of hearing children as having problems with “aggression, impulsivity, immaturity, and resistance to discipline and structure”. Hard of hearing children had significantly worse scores on the behavior rating scale--even when compared to children with severe losses.

Davis, J.M., Elfenbein J., Schum R., & Bentler R.A. – Effects of mild and moderate hearing impairment on language educational and psychosocial behavior of children. 1986. Journal of Speech and Hearing Disorders. 51. 53 -62.

16. Teachers rated hard of hearing children, even with minimal losses, more negatively than children without a hearing loss for independence, attention to task, emotional ability, and social confidence.

Culbertson, J.L., & Gilbert, L.E. (1986). *Children with unilateral sensorineural hearing loss: cognitive, academic, and social development.* Ear and Hearing, *7*, 38–42.

17. Abuse Rates Higher among Deaf and Hard of hearing children compared with Hearing Youths : (77%, so 25% more than hearing peers). The research also shows a direct correlation between childhood maltreatment and higher rates of negative cognition, depression and post-traumatic stress in childhood. Seventy-seven percent of deaf and hard-of-hearing respondents indicated experiencing some form of child maltreatment, compared with 49 percent among hearing respondents. In addition, respondents with more severe hearing loss indicated an increased rate and severity of maltreatment.

Schenkel, Lindsay S., Rothman-Marshall, Gail, Towne, Terra L, and Burnash, Danielle. Child maltreatment and trauma exposure among deaf and hard of hearing young adults. Department of Psychology, Rochester Institute of Technology, Rochester, NY, USA. Child Abuse & Neglect (Impact Factor: 2.47). 05/2014; 38(10). DOI: 10.1016/j.chiabu.2014.04.010. Source: PubMed.

18. Deaf and hard of hearing individuals with deaf parents appear to have better self-concepts than deaf and hard of hearing individuals with hearing parents. Some evidence is presented to suggest that deaf and hard of hearing subjects in residential schools have higher self-concepts than their peers in regular public school classes.

John E. Obrzut, Gerrard J. Maddock and Carolyn P. Lee- *Determinants of Self-Concept in Deaf and Hard of Hearing Children.*

19. Having established already that a lack of adequate language skills can be a cause of disruptive behaviors, one might still question whether it is fair to assume the same causes for hard of hearing children as we have found for those who are profoundly deaf. The language learning difficulties of deaf children are well documented; how do hard of hearing children compare on similar measures? To begin with, it is useful to define what we consider to be a hearing loss. Generally speaking, audiologists consider any loss of less than 25 dB to be within normal limits (*Bess & Humes, 1995*). Yet, even students whose hearing is considered normal may suffer the consequences of having a hearing loss. Research findings are that "even for students with mild hearing losses of 15 to 25 dB, the average delay in vocabulary and other language skills has been found to be over one year." Beyond that, he writes hard of hearing students have "been found to perform two to three years behind hearing students on standardized academic achievement tests, and are commonly held back from grade promotion by an average of one and a half grades." It is safe to say that even very minor hearing losses can have a strongly negative impact on language development, behavior and academic performance.

Grushkin, Donald A. (2003). *A dual identity for hard of hearing students good for the world, good for the deaf community, critical for students. (*Also see link for further research on hard of hearing children).

https://hearmehearmenot.files.wordpress.com/2008/11/dual_identity_for_hoh_students-odyssey-2003.pdf

20. A monolingual and monocultural approach in favour of a spoken language only can be devastating for children who are deaf or hard-of-hearing. It may hold back their possibilities to achieve to their full potentials regarding educational, personality and social development. The study is based on in-depth interviews with Finland-Swedish parents of deaf or hard-of-hearing children with hearing losses ranging from mild to profound. Therefore, sign language is crucial for deaf people's effortless communication but also for deaf people's self-assurance, togetherness as well as for their linguistic and cultural identity (Padden & Humphries 1988, Siegel 2006). Some of the arguments for a monolingual approach for deaf or hard-of hearing children are similar to ones proposed some 30 thirty years ago (regarding hearing children) about how early exposure of two languages will result in children growing up with poor language skills.

Londan, Monican - *Education for Children with a Spoken Language as a Second Language.* 2004, 2005, 2006.

21. Unilateral hearing loss – during the 1980s, two studies found that children with unilateral hearing impairment were 10 times more likely to repeat a grade compared to the general school-age population. Since the publication of those reports, grade retention has been found to be an ineffective strategy for achieving long-term academic success, and is no longer widely recommended. This survey describes how children with unilateral hearing loss are presently supported given this change in educational practices. Reports on 406 children indicated that 54% received individualized special education services, in addition to some level of audiologic support, and that 24% were functioning below average relative to their peers. Other information regarding demographics, use of amplification, and additional educational concerns are also reported.

English, Kris & Church, Gerald - *Unilateral Hearing Loss in Children:An Update for the 1990s;* Language, Speech, and Hearing Services in Schools Vol.30 26-31 January 1999. Duquesne University, Pittsburgh, Central Michigan University, Mt. Pleasant.

22 Forty children with mild to severe hearing losses were administered a battery of speech and language tasks. The children's speech was characterized by misarticulation of affricates and fricatives, mild-moderate hoarseness, mild resonance problems, and good intelligibility. Their language samples included syntactic errors, primarily involving the use of bound morphemes and complex sentence structures. The children's pragmatic errors consisted primarily of providing inadequate or ambiguous information to the listener.These results indicate a consistent pattern of oral

communication behavior that reflects the reduction of acoustic input that they experience.

Elfenbein, Jill L, Hardin-Jones, Mary A. & Davis Julia M. - *Oral Communication Skills of Children Who Are Hard of Hearing.* Language, Speech, and Hearing Services in Schools. Vol.39 342-351 July 2008. University of Iowa, Iowa City; Indiana University School of Medicine, Indianapolis; University of Minnesota Minneapolis,

23. Parents, audiologists, and educators have long speculated that children with hearing loss must expend more effort and, therefore, fatigue more easily than their peers with normal hearing when listening in adverse acoustic conditions. Until now, however, very few studies have been conducted to substantiate these speculations. Two experiments were conducted with school-age children with mild-to-moderate hearing loss and with normal hearing. In the first experiment, salivary cortisol levels and a self-rating measure were used to measure fatigue. Neither cortisol measurements nor self-rated measures of fatigue revealed significant differences between children with hearing loss and their normal hearing peers. In the second experiment, however, a dual-task paradigm used to study listening effort indicated that children with hearing loss expend more effort in listening than children with normal hearing.

Bourland C, H. & Tharpe, A. M. 1994. *Listening Effort and Fatigue in School-Age Children With and without Hearing Loss.* Journal of Speech and Hearing Research Vol.37 216-226. Vanderbilt Bill Wilkerson Center for Otolaryngology and Communication Sciences Nashville TN.

24. The purpose of the study was to examine the effect of minimal hearing loss (HL) on children's ability to perform simultaneous tasks in quiet and in noise. Conclusion: These data suggest that children with minimal HL may be unable to respond to a difficult listening task by drawing resources from other tasks to compensate.

McFadden, Brittany & Pittman, Andrea - *Effect of Minimal Hearing Loss on Children's Ability to Multitask in Quiet and in Noise.* Arizona State University, Tempe.

25. *R*eview of recent research studies concerning the importance of high-frequency amplification for speech perception in adults and children with hearing loss and to provide preliminary data on the phonological development of normal-hearing and hearing-impaired infants. The reviewed studies and preliminary results from this longitudinal study suggest that (1) hearing-aid studies with adult subjects should not be used to predict speech and language performance in infants and young children; (2) the bandwidth of current behind-the-ear hearing aids is inadequate to accurately represent the high-frequency sounds of speech, particularly for female speakers; and (3) preliminary data on phonological development in infants with hearing loss suggest that the greatest delays occur for fricatives, consistent with predictions based on hearing-aid bandwidth.

Stelmachowicz, Patricia G., Pittman, Andrea L., Hoover, Brenda M., Lewis, Dawna E. & Moeller, Mary Pat - *The Importance of High-Frequency Audibility in the Speech and Language Development of Children With Hearing Loss.* Arch Otolaryngol Head Neck Surg. 2004;130: 556-562.

26. Deaf and hard of hearing individuals with deaf parents appear to have better self-concepts than deaf and hard of hearing individuals with hearing parents. Some evidence is presented to suggest that deaf and hard of hearing subjects in residential schools have higher self-concepts than their peers in regular public school classes.

Obrzut, John E., Maddock, Gerrard J. & Lee, Carolyn P. - *Determinants of Self-Concept in Deaf and Hard of Hearing Children.* Journal of Development and Physical Disabilities. Vol. 11. No.3. pp.237-251. 1999.

27. Research with deaf users found social isolation and feelings of neglect. Richardson, J.T.E., Marschark, Marc., Sarchet, Thomasine., and Sapere, P. 2010. *Deaf and Hard-of-Hearing Students' Experiences in Mainstream and Separate Postsecondary Education*. J. Deaf Stud. Deaf Education. 2010. 15 (4): 358 – 382: *jdsde.oxfordjournals.org/content/15/4/358.fullD*

28. Prelingual deafness entails far reaching communicative problems with profound consequences in cognitive, social and emotional development. In that context the term "deaf" is seen from a cultural perspective. The use of sign language is the most important factor in establishing a deaf community. As quality of life has never been assessed before in a larger deaf population an interactive computer-based assessment package for measuring quality of life and psychological distress in full self administration was developed.

The Brief version of the WHO Quality of Life (WHOQOL, http://www.bath.ac.uk/whoqol/questionnaires/ethics-statement.cfm) Questionnaire, the 12-item General Health Questionnaire (GHQ-12, http://www.nfer-nelson.co.uk/health_and_psychology/resources/general_health_questionnaire/general_health_questionnaire.asp) and five subscales of the Brief Symptom Inventory (BSI, http://pearsonassessments.com/tests/bsi.htm) have been translated into sign language, videotaped and installed into the computer program ANIMAQU. A total of 236 members of the deaf community in Upper Austria participated 2002/2003 (total number of registered members 502). Reliability of the versions for the deaf was in an

acceptable range for the WHOQOL-Bref and the GHQ-12. For the BSI the reliability was even higher than that of the general population.

The results of the WHOQOL-Bref and the BSI were compared with normative data from German-speaking populations, the GHQ data were compared with an Austrian normative sample.

The deaf sample had a significantly poorer quality of life than the general population for the physical and psychological domains ($p < 0.01$) as measured by the WHOQOL-BREF. However, in the domain of social relationships no significant difference ($p = 0.19$) was demonstrated. All findings with the GHQ-12 and the BSI show much higher levels ($p = 0.01$) of mental distress among deaf people. Conclusion: Although a poorer quality of life and a higher level of mental distress is demonstrated the similarity to the general population in the domain social relationships can be regarded as an indicator of the ability of theDeaf community to establish satisfying relationships based on a common communication system. For most deaf people sign language has that vital role.

J. Fellinger, J, Holzinger D, Gerich, J & Goldberg, D – *Quality of Life Measures in the Deaf.* Handbook of Disease Burdens and Quality of Life Measures. 2010, pp 3853-3870. Pub 2010.

B. Book

One mother of a hard of hearing child has written a book about her experiences. She observes that professionals, as well as parents, too often take the position that deaf children need a great deal of extra help and attention, but that hard of hearing children can manage very well if they are given hearing aids and preferential seating. Her son suffered from these attitudes, and she herself was often avoided by the parents of deaf children because her child was more advantaged than theirs. As she put it, her child was “not deaf enough.” She observes that professionals, as well as parents, too often take the position that deaf children need a great deal of extra help and attention, but that hard of hearing children can manage very well if they are given hearing aids and preferential seating. Her son suffered from these attitudes, and she herself was often avoided by the parents of deaf children because her child was more advantaged than theirs. As she put it, her child was “not deaf enough.” That theme is echoed by one of the mothers interviewed for this study: *I went to the library to get books to help my son understand [his hearing loss]. And the only books that were available were for profoundly deaf people. There were several books about them but nothing related to [my son] because he only has a high frequency hearing loss.* The double edge of “Positive Coping” - responding parents also described important positive coping abilities that they and their children had developed.

Candlish, P. A. M. 1996. *Not deaf enough: Raising a child who is hard of hearing with hugs, humor, and imagination*. Washington, DC: Alexander Graham Bell Association for the Deaf.

C. Minority Identity threat

29. The impact of change in context on identity maintenance, the implications of maintenance efforts for group identification, and the effects of perceived threats to identity on self-esteem associated with group membership are examined in a longitudinal study of Hispanic students during their 1st year at predominately Anglo universities. Whereas ethnic identity is initially linked to the strength of the students' cultural background, maintenance of ethnic identity is accomplished by weakening that link and remooring the identity to the current college context. Results suggest 2 distinct paths by which students negotiate their ethnic identity in a new context. Students with initially strong ethnic identity become involved in cultural activities, increasing the strength of their identification. In contrast, students with initially weaker identification perceive more threat in the environment, show decreases in self-esteem associated with group membership, lowering identification with their ethnic group. The findings both support social identity theory and illustrate the need for more contextual analyses of identity processes. (PsycINFO Database Record (c) 2012 APA, all rights reserved).

Ethier, Kathleen A.; Deaux, Kay - *Negotiating social identity when contexts change: Maintaining identification and responding to threat*. Journal of Personality and Social Psychology, Vol 67(2), Aug 1994, 243-251. http://dx.doi.org/10.1037/0022-3514.67.2.243

D. Deaf Identity

30. Cultural identity is a construct from the literature on Minority Identity Development Theory. One's cultural identity provides one means of understanding one's psychological relationship to cultural communities with which one has ties. A new paradigm has been presented for understanding deafness as a cultural difference rather than a medical pathology. To draw out one implication of this new paradigm, a theory is presented for how audiologically deaf people develop culturally Deaf identities. Four stages of cultural identity development are described. Culturally hearing refers to people who hold the dominant culture's attitudes and beliefs about deafness. Culturally marginal refers to people who experience shifting loyalties or profound confusion regarding their relationship to the Deaf and hearing worlds. Immersion identity refers to a radical or militant Deaf stance. Bicultural deaf people have integrated their Deaf pride in a balanced way into their full humanity. Different paths of development are outlined dependent on the circumstances surrounding the hearing loss. An instrument, the Deaf Identity Development Scale (DIDS) is developed in both English and American Sign Language to measure Deaf cultural identity. The DIDS is administered to 161 subjects: 105 students from Gallaudet University and 56 members from an organization of late deafened adults. Support for the existence of the four distinct kinds of cultural identity is provided by acceptable reliability, interscale and item-to-scale correlations. Thirteen hypotheses pertaining to instrument construction and theory and test validity are tested. Test results are used to illuminate further the paths of deaf identity development. Suggestions for improvement in the DIDS are presented.

Neil Stephen Glickman - *Deaf identity development: Construction and validation of a theoretical model*. Doctoral Dissertations Available from Proquest. Paper AAI9329612. 1993.

http://scholarworks.umass.edu/dissertations/AAI9329612

31. The Deaf Identity Development Scale (Glickman, 1993) was modified to include hearing individuals and examine how hearing and deaf adults identify themselves. Statistical analysis based on 244 deaf, hard-of-hearing, and hearing respondents revealed a significant interaction between hearing status of self and parents on the hearing; marginal, and immersion scales of the modified version but not on the bicultural scale. Codas are more marginalized, less immersed, and similarly “hearing” in comparison to deaf persons with deaf parents. Hard-of-hearing respondents with deaf parents endorse more hearing values and fewer deaf values in comparison to deaf counterparts and also appear to be more marginalized. There were no significant differences between deaf and hard-of-hearing individuals with hearing parents. Compared to hearing respondents with hearing parents, deaf counterparts were more marginalized, more “hearing,” and equally “deaf” Strong professional affiliation with the deaf community resulted in scores that differed significantly from those for individuals not as strongly affiliated. We discuss implications for identity development.

Leigh, Irene W., Marcus, Alan L., Dobosh, Patricia K. and Allen, Thomas E. - *Deaf/Hearing Cultural Identity Paradigms: Modification of the Deaf Identity Development Scale.* J. Deaf Stud. Deaf Educ. 1998. 3 (4): 329-338.

Bat-Chava, Yael - *Diversity of Deaf Identities.* American Annals of the Deaf Volume 145, Number 5, December 2000. pp. 420-428 | 10.1353/aad.2012.0176

32. The Deaf Identity Development Scale (DIDS; N. S. Glickman, 1993) was revised on the basis of recommendations by N. S. Glickman and was validated on a sample of 323 hearing-impaired participants residing in the southwestern part of the United States. The DIDS is an instrument designed to measure 4 deaf identity constructs: hearing, marginal, immersion, and bicultural. The findings were tested according to the deaf identity development theory and the data were analyzed for internal consistency reliability, item-to-scale reliability, and interscale correlations. Results of these and factor analysis support the existence of 4 relatively independent deaf identities. Results of 4 separate analyses of variance with post hoc multiple comparisons reveal that onset and severity of hearing loss influences one's deaf identity development. (PsycINFO Database Record (c) 2012 APA, all rights reserved).

This study explored the interrelationship between Deaf identity and self-concept. Very little research has explored Deaf identity and none has explored how perceptions of fit with how Deaf culture and Hearing culture influence self-concept. Conceptually, this study looks at cultural identification as falling along

two dimensions-identification with the Deaf culture and identification with the Hearing (majority) culture, resulting in four categorical descriptors culturally hearing, marginal, immersed, and bicultural. It was hypothesized that those who identify with both the hearing and Deaf culture (bicultural individuals) would have the best self-concept while those who identified as marginal would have the worst self-concept. The participants consisted of 46 students enrolled in a transitional program for the deaf and deaf and hard of hearing university students. Results supported the hypotheses (bicultural individuals had the highest self-concept and marginal individuals had the lowest). Additional tentative and exploratory hypotheses are also discussed. Clinical implications for family therapists of this research are presented.

Fischer, Lisa Colangelo & McWhirter, J. Jeffries - *The Deaf Identity Development Scale: A revision and validation.* Journal of Counseling Psychology, Vol 48(3), Jul 2001, 355-358.
http://dx.doi.org/10.1037/0022-0167.48.3.355

33. This study explored the interrelationship between Deaf identity and self-concept. Very little research has explored Deaf identity and none has explored how perceptions of fit with the Deaf culture and Hearing culture influence self-concept. Conceptually, this study looks at cultural identification as falling along two dimensions-identification with the Deaf culture and identification with the Hearing (majority) culture, resulting in four categorical descriptorsculturally hearing, marginal, immersed, and bicultural. It was hypothesized that those who identify with both the hearing and Deaf culture (bicultural individuals) would have the best self-concept while those who identified as marginal would have the worst self-concept. The participants consisted of 46 students enrolled in a transitional program for the deaf and deaf and hard of hearing university students. Results supported the hypotheses (bicultural individuals had the highest self-concept and marginal individuals had the lowest). Additional tentative and exploratory hypotheses are also discussed.

Cornel, Sherri Lester & Lyness, Kevin P. - Therapeutic Implications for Adolescent Deaf Identity and Self-Concept. Journal of Feminist Family Therapy. Volume 16, Issue 3, 2005 pages 31-49.

E. Bilingualism and multilingualism acquisition

34. Research into the neuroplasticity of the brain (Penfield and Roberts, 1959) popularised by Lenneberg, 1967, outlined the maturational constraints on the time a first language can be acquired: the critical period hypothesis. If language acquisition does not occur by puberty, some aspects of language can be learnt but full mastery cannot be achieved. There is a myth that sign languages, being the natural languages of deaf people, can be mastered at any time, but they are languages and the same rules that apply to spoken languages appertain to them. Cormier, Schembri, Vinson and Organidou, (2012) state the age of acquisition (AoA) effects in deaf BSL users via a

grammaticality judgment task were studied and results show that "*accuracy of grammaticality judgement decreases as AoA increases, until around age 8, thus showing the unique effect of AoA on grammatical judgement in early learners…..* "*successful early acquisition of a first language is crucial, whether that language is a natural signed language such as BSL or a spoken/written language such as English. Relying on the acquisition of spoken language as L1 is risky among deaf children, and if it fails, successful acquisition of a signed language as L1 is unlikely as well, resulting in an overall delay in language development that many years of exposure to sign language does not appear to eliminate"* .(Humphries et al., 2012).

35. The current study supports many others showing that early exposure to accessible language is much more likely to result in successful language acquisition than a later exposure. The advantages of early sign language exposure remain clear even with rapid advances in hearing aids and cochlear implants (Mayer & Leigh, 2010).

36. Ensuring that deaf children have early exposure to both sign language and a spoken language, will provide the deaf child with the best chance for successful language acquisition, in either or both languages.

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F. Linguistic rights to sign language as a natural language for deaf people

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37. The right to a well-functioning and – especially regarding deaf people – an accessible first language is vital for the individual's emotional, social and cognitive development.

Svartholm 1994, 2006; Siegel 2006.

G. The long-lasting advantage of learning sign language in childhood:

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39. Deaf in America, voices from a culture. Cambridge, MA: Harvard University Press. Siegel, Lawrence. (2006).
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41. Sign languages – How the Deaf (and other Sign language users) are deprived of their linguistic and human Rights. Terralingua. Skutnabb-Kangas, T. http://www.terralingua.org/DeafHR.html [hämtat 20.6.2006] Svartholm, K. (1994).
42. Second language learning in the Deaf. I Bilingualism in Deaf education, red. av Inger Ahlgren & Kenneth Hyltenstam. 61–70. Hamburg: Signum Press. Svartholm, K. (2006).
43. Svenska som andraspråk för döva – en ämnesöversikt. I Teckenspråk: Sociala och historiska perspektiv. red. av Karin Hoyer, Monica Londen och Jan-Ola Östman. 23-51. [Teckenspråksstudier 2] Nordica, Institutionen för nordiska språk och nordisk litteratur, Helsingfors universitet. Volterra, Skutnabb-Kangas, T.
44. V & Erting, C. (1994). From gesture to language in hearing and deaf children. Gallaudet University Press.

45. The policy of "informed choice" for parents of deaf children results in only a small minority of deaf children being informed about communication choices, i.e profoundly, and maybe severely deaf children. An audit survey in 2014 commissioned by the Department for Education found that from 18 deaf education provider services only 7 informed families directly, and 5 of these gave out leaflets. This concentration is on deaf children with profound loss, and even only to those whose parents do not opt for cochlear implantation, whose deaf children have additional needs, or whose home language is not English. The unwritten policy of parental choice, has been handed down since the 1889 Royal Commission on Deaf and Blind Children through the DfE,

teacher training, audiology and consultants' training, national charities' policies, and because deaf users are not listened to.

H. Auditory research

- Under what circumstances can Soundfield systems be beneficial to hearing and / or hearing -impaired pupils ?

- Could a study similar to the Sweyne Park study be used to determine the benefits of acoustic treatment (say to reduce RTs in secondary classrooms from 0.8 to 0.4 s Tmf) compared with the use of a well-designed and properly used Soundfield system ?

- *Ambient noise levels* - Are the BB93 and / or BATOD criteria for internal ambient noise levels in mainstream and HI classrooms appropriate ?

- *Sound insulation* - Are the BB93 criteria for sound insulation between classrooms, and particularly between classrooms and circulation spaces, appropriate ?

Canning, D & James, A. *The Essex Study: Optimised classroom assistance for all.* May 2012. Pub. Association of Noise Consultants, info@theanc.co.uk

I. Plethora of research into brain imaging

For more than a century, scientists have been studying how knowledge comes into the human brain through sound. They believe that brain tissue they label as part of the auditory cortex is exclusively responsible for processing sound—and thus is a crucial tissue to stimulate in the pursuit of language acquisition. Dr. Laura-Ann Petitto has conducted studies that prove those years of conjecture wrong. What was believed to be only sound processing tissue, instead, processes both signed and spoken languages. Rather than being exclusively set to sound, parts of what was previously labeled "auditory tissue" is set to highly specific temporal patterns at the heart of all human language, be it language on the hands or the tongue. "The human brain does not discriminate between the hands and the tongue," said Petitto. "People discriminate, but not our biological human brain." Petitto, a world-renowned cognitive neuroscientist and a developmental cognitive neuroscientist, opened Gallaudet's state-of-the-art Brain and Language Laboratory (BL2) in 2011. At this lab, Petitto and her team study the acquisition and neural processing of American Sign Language (ASL), how children learn to read, and the effects of early bilingual language exposure on the developing brain and its functions. In Petitto's past work at the Montreal Neurological Institute, she tested the assumption that a spoken modality was somehow superior to a signed modality by posing the hypothesis that signed languages were not only equivalent to spoken

languages in their behavioral expression and development, but biologically equivalent as well. The human brain would reveal the proof.

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http://www.gallaudet.edu/petitto.html

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