



REVIEW OF RESEARCH

ISSN: 2249-894X

IMPACT FACTOR : 5.7631(UIF)

UGC APPROVED JOURNAL NO. 48514

VOLUME - 8 | ISSUE - 9 | JUNE - 2019



PREFERRED LEARNING MODALITIES OF STUDENTS WITH HEARING LOSS

Jignya Shah¹ and Dr. Varsha Gathoo²

¹Ph.D.Scholar, Department of Education, A.Y. J. National Institute for the Speech and Hearing Disabilities (Divyangjan), Mumbai.

² Head of the Department, Department of Education, A. Y. J. National Institute for the Speech and Hearing Disabilities (Divyangjan), Mumbai.

ABSTRACT:

The aim of the study was to examine the association between the preferred learning modalities and the students with severe and profound hearing loss. A survey was conducted on parents and teachers of 120 students with hearing loss randomly selected from the inclusive primary schools in Maharashtra. Gender as a variable was also studied to ascertain if boys and girls with hearing loss differ in their preferences for learning modalities. The hypotheses were tested at 0.05 level of significance using chi square test. The results obtained showed $p < 0.05$ inferring a very strong association between the degree of hearing loss in students and their preferred learning modalities. The result also showed significant association between gender and the preferred learning modalities.

KEYWORDS: preferred learning modality, hearing loss, gender.

INTRODUCTION

Inclusion means welcoming, valuing, empowering and supporting the diverse academic and social learning of all students in shared environments and experiences for the purpose of attaining the goals of education (Villa, 2005). India as a country is largely diverse and determines to be inclusive. The social landscape of classrooms is as well becoming increasingly diverse due to enactment of various legislations most importantly the RTE (2009)

and the RPWD (2016). With inclusion as a mandate the schools in India across different states need to enroll children differing in the socio-cultural backgrounds, gender, abilities and dwellings. Kreitner and Kiniki (2001) view diversity as representing the multitude of individual differences and similarities that exist between or among individuals. These differences are seen in a number of aspects which includes the ways students perceive and process the information provided in the class (Novin, Arjomand & Jourdan, 2003; Logan & Thomas, 2002; Felder & Henriques, 1995; Felder,

1993; Riding & Sadler-Smith, 1992; Felder & Silverman, 1988; Claxton & Murrell, 1987). Differences are seen in the learning speeds with some students taking more time, while others are quicker in learning. Some students needing extra help and support from teachers while some others being independent and learning on their own. Students also differ in ways of interactions and also in manner in which they manage themselves in inclusive classrooms. A cumulative benefit of this diversity in inclusive classrooms is that students in an overall way develop and exhibit

different problem solving and learning strategies (Ansell & Pagliaro, 2006; Courtin, 2000; Hauser et al. 2008; Schick, deVilliers, deVilliers & Hoffmeister, 2007; Strassman, 1997).

STUDENTS WITH HEARING LOSS IN INCLUSIVE CLASSROOMS

Students with hearing loss are those who without amplification devices are not able to hear the conversation speech at a prescribed level. As a result of which they find it difficult to keep pace with others in the inclusive class with respect to their content knowledge and learning (Marschark & Waulters, 2008). These children also demonstrate cognitive differences (Marschark et al. 2006) which basically occur due to their deficit language and hence are academically behind their hearing counterparts. According to Marschark et al., (2015) apart from these, their lower academic achievements are a consequence of many other factors. These include personal characteristics of the students such as hearing thresholds, language fluencies, mode of communication, and communication functioning. With regards to the hearing thresholds, reviews by Goldberg and Richburg (2004) and Moeller, Tomblin, Yoshinaga-Itano, Connor, and Jerger (2007) opine that even minimal hearing losses of 15 dB (decibels), can significantly affect academic achievement and literacy of students, in particular. The characteristics of their family environments especially the hearing status of parents which leads to differences such as parent's education level, socio economic status and the experiences both inside and outside school including school placement also has a bearing on academics of the child experiencing hearing loss. Breen & Jonsson (2005) especially emphasizes that deaf students' home background and cultural environment are crucial determinants for the mode of communication which also impacts the school success. This is because the students with hearing loss enter school with lacking fluency in either a signed or a spoken language (Gregory, 1986; Singleton & Morgan, 2006). The schools often struggle to provide adequate structure the language environments, access and opportunities for Deaf and hard of hearing children to learn (Knoors & Marschark, 2012, 2014).

LEARNING PREFERENCES OF CHILDREN:

Besides the differences in modes of communication it is believed that similar to hearing children, children with hearing loss may also differ in their inclinations and choices for the modes of learning. In general, the preferences for learning modalities are viewed as how an individual learner uses different senses to get in the information. Learning modalities refers to the approach by which an individual learner uses to receive information, how they best concentrate, process and retain information. According to Sreenidhi and Chinyi (2017) Fleming's VAK model are the most common and widely used categorizations of the various types of learning styles viz the Visual (V), Auditory (A), and the Kinesthetic (K) sensory modalities. These preferences provide a learner's profile of their learning styles, based on the sensory modalities which are involved in taking in information. The characteristics patterns for each of these as specified by Sreenidhi and Chinyi (2017) are as follows:

- (i) Visual Learners prefer to learn through seeing. These learners prefer to see the information and may forget if it's only heard. While learning and internalizing information, they tend to visualize and imagine things by using mind maps. They have a predisposition to write, draw and make notes for themselves. During classroom instructions they may need to see the teachers' body language and facial expressions to fully understand the content of the lesson.
- (ii) Auditory learners prefer to learn through listening. They learn best through verbal lectures, discussions, talking things through and listening through what others have to say. These students in class may struggle to comprehend by reading a lesson but may understand if they listen to the same content been read to them in a class lecture. They are found good at following verbal instructions and prefer to hear and may avoid reading.
- (iii) Kinesthetic / Tactile Learners are those who learn through moving, doing and touching. Hence, they are referred to as the 'doers.' These students learn best through hands on approach or by undertaking activities for exploring the physical world around them. They may find it hard to sit still for long periods and may get distracted if not provided opportunities for explorations.

NEED AND RATIONALE FOR THE STUDY:

With inclusion as mandate, teachers have diverse classrooms which include children with varying degrees of hearing loss in mainstream schools. Accountability in schools demands that teachers cater to the individual needs of the students so that all learners learn and no student is left behind. There are many assumptions and suppositions regarding children who are deaf especially those with severe and profound hearing loss. There is a general (mis) understanding that all children with hearing loss and especially the ones with more severe and profound hearing losses are invariably signers and visual learners. According to Marschark et al., (2017) it is a misnomer that deaf students are visual learners. The authors while quoting the fact that deaf students depend more on vision than audition both in communication and in processing information, emphasize that a greater reliance on vision does not make deaf categorized as visual learners. They may differ in their preferences of learning also because of the technological advancements of listening devices such as cochlear implants. It is therefore worthwhile to understand their preferences and needs so as to facilitate their learning's. An attempt through the present study was hence made to know their preferences for learning modalities of both boys and girls with severe to profound hearing loss so that the outcomes of such a study can be used as evidence while designing lessons in mainstream schools. Such an effort is an attempt to create a data base for praction ersso as toaddress the differential needs in inclusive classrooms to enable the most efficient learning to take place.

EXPLANATION OF KEY TERMS:

Preferred learning modalities: For the present study this meant the favored learning mode viz auditory, visual or kinesthetic used by students with hearing loss while learning as perceived by the parents and teachers of each individual student with hearing loss.

Students with hearing loss: The girls and boys with severe and profound hearing loss enrolled in inclusive schools of Maharashtra.

Students with severe and profound hearing loss: The students having a hearing loss of 71dB to 90 dB were referred to as severe and those above 91 dB were referred to as profound hearing loss.

Association: For the present study this meant relationship between hearing loss and preferred learning modality of students with severe and profound hearing loss.

Aim:

The aim of the study was to ascertain if there was an association between the preferred learning modalities and the students with severe to profound hearing loss.

OBJECTIVES OF THE STUDY:

1. To study the association between the preferred learning modalities of students with severe and profound hearing loss.
2. To study the association between the gender and the preferred learning modalities of the students with severe and profound hearing loss

Hypotheses:

1. There exists no association between the preferred learning modalities and hearing loss of the students with severe and profound hearing loss.
2. There exists no association between the gender and the preferred learning modalities of the students with severe and profound hearing loss.

Research Questions:

- 1) What are the most preferred learning modalities of boys with severe and profound hearing loss?
- 2) What are the most preferred learning modalities of girls with severe and profound hearing loss?

METHODOLOGY:**Tool**

'Know Your Child's Learning Modalities' (KYCLM) an indigenous tool was developed by the researchers as no standardized tool was available. Content validation of the tool was undertaken, and the reliability was ascertained. The same was 0.94 which was calculated using Cronbach's Alpha and found to be highly reliable. KYCLM had 20 items in the form of MCQs based on the context of learning. Each item had three options related to each of the modality namely Auditory, Visual and Kinesthetic. The participants of the study i.e. the parents and the teachers of students with hearing loss had to respond by tick marking in the space provided. The instructions provided were to tick mark the most preferred option(s). If a parent or the teachers tick marked only one option for example 'auditory' then that was considered as the preferred learning modality. However, if the tick mark was for 2 options for example 'auditory' and 'visual', then the students preferred modality was considered as 'auditory-visual'.

Sample of the study

The present study was undertaken for students with varying degrees of hearing impairment attending main stream inclusive schools. Boys and girls constituting the students with hearing loss were equally chosen. The details of the selection criteria are given in the Table 1 below:

Table 1: Inclusion criteria of the sample

Criteria	Students with hearing loss
Hearing loss of the student	Severe, profound
Chronological age of the student	5 to 10 years
Type and geographic area of school of the student	Inclusive school from Mumbai, Navi-Mumbai, Thane, Pune and Kolhapur
Professional qualification of teachers	Diploma / Bachelor's Degree in Education
Criteria for the teachers	Teaching children with hearing loss in inclusive schools for a minimum of 2 years. Currently teaching both students with severe or profound hearing loss
Criteria for the parents	Parents having child of severe or profound hearing loss enrolled in inclusive primary school

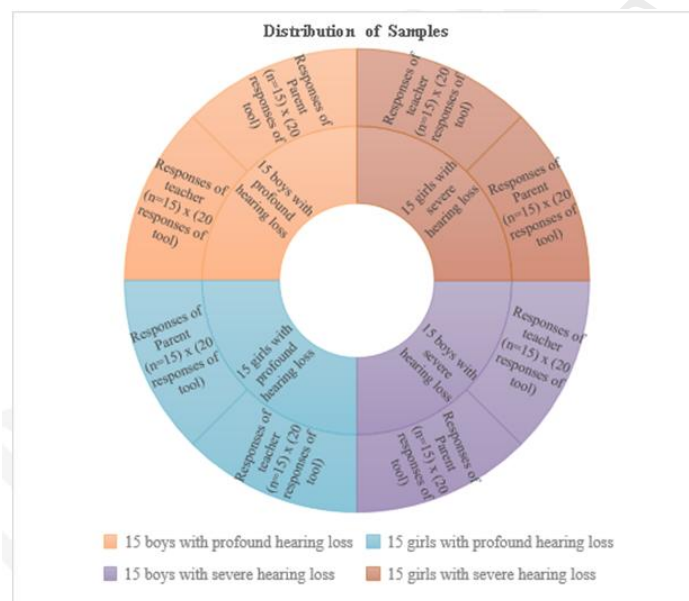
Considering the age group of the selected children (5 to 10 years), it was decided to obtain responses from parents (n=60) and teachers (n=60) of the students with severe and profound hearing loss. This is because parents and teachers form the important stakeholders who are actively interacting with the children in enhancing their learning. The details of sample (n= 120) i.e. parents and teachers of boys and girls with severe and profound hearing loss and their responses to the 20 items on KYCLM taken together are given below:

Table 2: Details of the sample

Students with hearing loss	Samples	Total Responses
15 boys with profound hearing loss	Responses of Parent (n=15) x (20 responses of tool)	300
	Responses of teacher (n=15) x (20 responses of tool)	300
15 girls with profound hearing loss	Responses of Parent (n=15) x (20 responses of tool)	300
	Responses of teacher (n=15) x (20 responses of tool)	300
15 boys with severe hearing loss	Responses of Parent (n=15) x (20 responses of tool)	300
	Responses of teacher (n=15) x (20 responses of tool)	300
15 girls with severe hearing loss	Responses of Parent (n=15) x (20 responses of tool)	300
	Responses of teacher (n=15) x (20 responses of tool)	300

Distribution of sample:

The sample distribution of the study is detailed out in the Figure 1 provided below:



Analysis and Results:

The obtained data on KYCLM was analyzed using SPSS software. The non-parametric chi-square statistical test was used for the analysis of the data. The obtained results are as follows:

Objective 1: To study the association between the preferred learning modalities of students with severe and profound hearing loss

Table3: Preferred learning modalities of students with severe and profound hearing loss

Hearing Status	Preferred Learning Modalities							Chi Square	'p' Value	Significance
	A	AK	AV	AVK	K	V	VK			
Students with profound loss	283	103	802	0	0	1	11	338	0.000	Significant
Students with severe loss	550	262	359	6	3	7	13			

Result of hypothesis 1

The obtained result depicts that the students with profound hearing loss primarily prefer a combination of 'auditory-visual' learning modality. Their second preference is for the 'auditory' modality. In case of students with severe hearing loss the primary preference of learning modality is 'auditory' and the secondary preference is for a combination of 'auditory - visual' learning modalities. The obtained 'p' value of 0.000 is less than 0.05. This infers that there exists a significant association between the preferred learning modalities and the students with severe and profound hearing loss.

Objective 2: To study the association between the preferred learning modalities and the boys and girls with severe and profound hearing loss

Table 4: Preferred learning modalities of boys and girls with severe and profound hearing loss

Gender	Preferred Learning Modalities							Chi Square	'p' Value	Significance
	A	AK	AV	AVK	K	V	VK			
Girls with profound loss	142	61	395	0	0	0	2	424	0.000	Significant
Boys with profound loss	141	42	407	0	0	1	9			
Girls with severe loss	294	84	197	4	3	7	11			
Boys with severe loss	256	178	162	2	0	0	2			

Result of hypothesis 2:

The obtained result reveals that the girls and boys with profound hearing loss preferred a combination of 'auditory-visual' and their secondary preference is 'auditory' learning modality. The girls and boys with severe hearing loss preferred 'auditory' as their learning modality. But the girls with severe hearing loss depict a second preference for a combination of 'auditory-visual' while boys with severe hearing loss preferred a combination of 'auditory- kinesthetic' as their learning modalities. The obtained 'p' value was 0.000 which was less than 0.05. This infers that there exists a significant association between the gender and the preferred learning modalities of the students with severe and profound hearing loss in the inclusive schools.

Result of Research Questions and Statistical Interpretation:

The data was analyzed using Excel software. Percentage scores were used for the analysis of the data.

Research Question 1:What are the most preferred learning modalities of boys with severe and profound hearing loss?

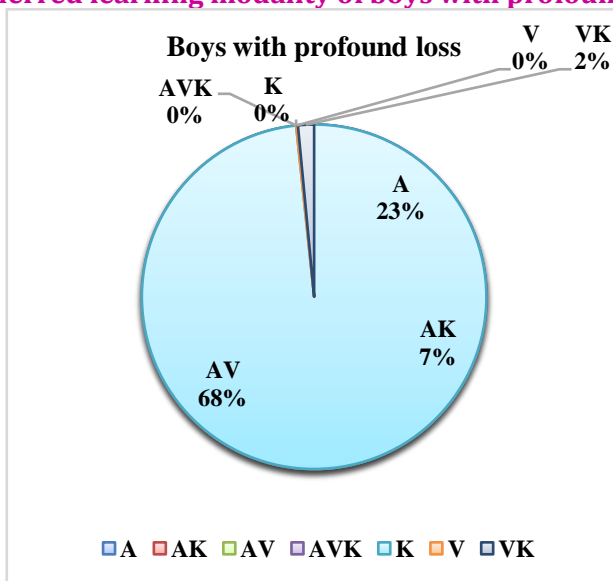
Research Question 2: What are the most preferred learning modalities of girls with severe and profound hearing loss?

Descriptive statistical interpretation of data

Table: 5 Preferred learning modalities and boys and girls with hearing loss

	Preferred Learning Modalities							Total Responses
	A	AK	AV	AVK	K	V	VK	
Boys with profound loss	141	42	407	0	0	1	9	600
Boys with severe loss	256	178	162	2	0	0	2	600
Girls with profound loss	142	61	395	0	0	0	2	600
Girls with severe loss	294	84	197	4	3	7	11	600

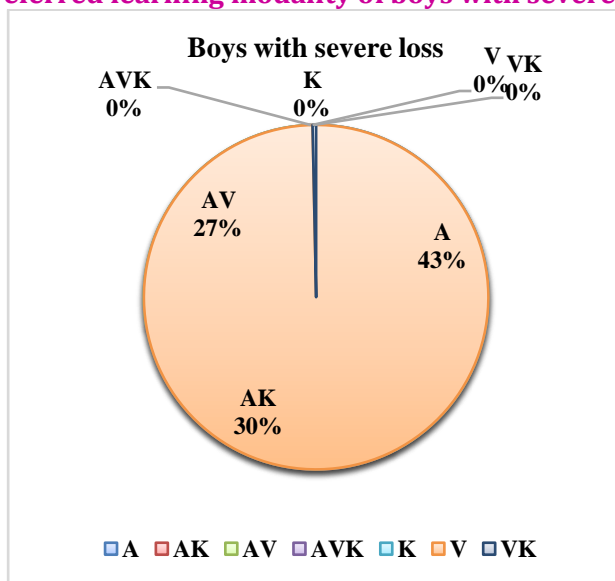
Figure 2: Preferred learning modality of boys with profound hearing loss



Preferred modalities of boys with profound hearing loss

The data depicted in Figure 2 is based on the total of 600 responses of parents and teachers of boys with profound hearing loss. Out of these, for 407 i.e. for 68% boys the most preferred modality was a combination of ‘auditory- visual’. 141 responses i.e. for 23% boys the second preference was ‘auditory’ modality and 42 responses i.e. for 7% boys with profound hearing loss the preference was for a combination of ‘auditory – kinesthetic.’

Figure 3: Preferred learning modality of boys with severe hearing loss



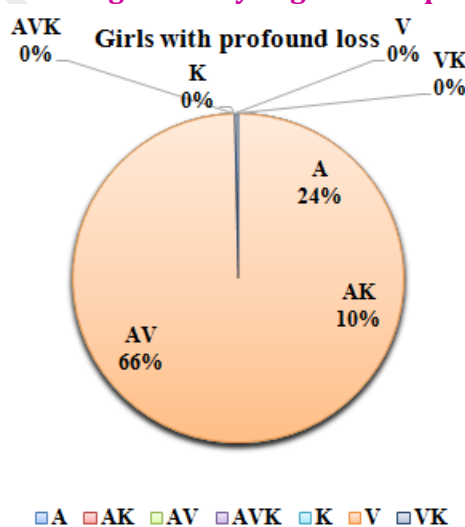
Preferred modalities of boys with severe hearing loss

Out of the total 600 responses of parents and teachers of children with severe hearing loss it is seen from Figure 3 that 256 i.e. for 43% boys the most preferred modality was ‘auditory.’ In case of 178 responses i.e. for 30% boys the second preference was ‘auditory-kinesthetic’ modality and the 162 responses i.e. for 27% boys with severe hearing loss the preference was for a combination of ‘auditory-visual.’

Result of Research Question 1

The result obtained shows that the boys with profound hearing loss primarily preferred a combination of ‘auditory – visual’ as their learning modality whereas boys with severe hearing loss preferred ‘auditory’ as their learning modality. The secondary preference of learning modality among the boys with profound hearing loss was ‘auditory’ and for boys with severe hearing loss was mixed learning modality i.e. a combination of ‘auditory – kinesthetic’ and ‘auditory – visual.’

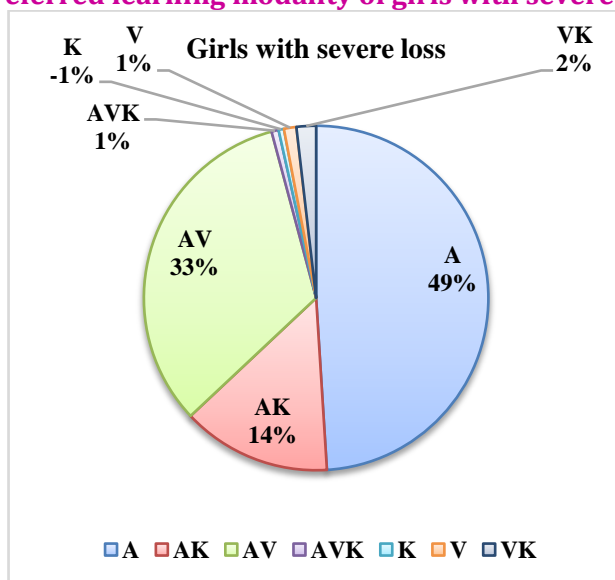
Figure 4: Preferred learning modality of girls with profound hearing loss



Preferred modalities of girls with profound hearing loss

Figure 4 depicts that out of the total 600 responses of parents and teachers of girls with profound hearing loss, 395 i.e. for 66% girls the most preferred modality was a combination of ‘auditory- visual’. 142 responses i.e. for 24% girls the second preference was ‘auditory’ modality and 61 responses i.e. for 10% girls with profound hearing loss the preference was for a combination of ‘auditory – kinesthetic.’

Figure 5: Preferred learning modality of girls with severe hearing loss



Preferred modalities of girls with severe hearing loss

The Figure 5 depicts that for a total of 600 responses of parents and teachers of girls with severe hearing loss 294 i.e. for 49% girls the most preferred modality was a combination of ‘auditory’. 197 responses i.e. for 33% girls the second preference was ‘auditory – Visual’ modality and 84 responses i.e. for 14% girls with severe hearing loss the preference was for a combination of ‘auditory-kinesthetic.’

Result of Research Question 2

Girls with profound hearing loss primarily preferred a combination of ‘auditory – visual’ as their learning modality whereas girls with severe hearing loss preferred ‘auditory’ as their learning modality. The second preference of learning modality among the girls with profound hearing loss was ‘auditory’ and those of girls with severe hearing loss were a combination of ‘auditory - visual’ learning modality.

DISCUSSION:

Preference for auditory modality for learning in students with severe hearing loss

Students with severe hearing loss have better audibility as compared to the profound hearing loss (Risberg, 1976). The studies of speech perception abilities of severe hearing loss and profound hearing loss by van Uden and Cramer et al (as cited in Risberg, 1976) showed mean hearing loss of more than 80dB for the frequencies 500, 1000 and 2000Hz. Looking at the age group of the students which was about 5 to 10 years and the fact that they are enrolled in inclusive classrooms, it is quite possible that these students may have attended an early intervention program. According to Gathoo & Singh, (2012) most of the early intervention programs in India focus on the oral approach so the students might have been exposed and used to the auditory modality and hence may be preferring auditory modality. This coupled with advanced hearing aid or cochlear implant which are available for the students, the auditory reception is highly improved and so the students may have been attuned to the use of auditory modality. Another fact pertinent to the preference of auditory modality may be due to

the fact that about 90% of children with hearing loss are born to the hearing parents (Marschark, 2015). The hearing parents are bound to provide oral aural exposure and even the teacher and students in inclusive schools must have been providing auditory listening environment. Due to all these factors, it is quite likely that the students with severe hearing loss of this study may have had preferred the use of 'auditory' modality. The social prestige associated with use of oral-aural mode is yet another contributing factor for preference of 'auditory' mode in deaf students (Cappelli, et al. 1995).

Preference for auditory-visual modality for learning in students with profound hearing loss

The students with profound hearing loss have the hearing thresholds greater than 90dB (ASHA, 2012) and their speech perception abilities makes them difficult to speech communication (Erber, as cited in Hochbery, I. 1983) so they may be preferring 'auditory-visual' instead of just 'auditory' modality. This may be the main reason as to why these students may prefer 'auditory-visual' modalities so that the lost auditory input is to be compensated by the visuals for the information. According to Hauser and Marschark (2008), information presented in visual auditory modality leads to better comprehension of learning and memory than information presented in either modality alone. Another reason may be due to the environmental factors of the inclusive schools. Lack of classroom acoustics and noise levels in mainstream school (Shinde, 2009) may be another hurdle in understanding the information or instructions which is generally given by the teacher orally. Poor auditory reception may be compensated by preferring dual input of 'auditory-visual'. A significant factor to be taken into consideration is the requirement and availability of sign language interpreters. Students with profound loss require interpreters. However, in the Indian situations these are limited. So due to the unavailability of sign language interpreters in inclusive classrooms, the students with profound hearing loss may be preferring auditory-visual instead of just 'auditory'.

CONCLUSIONS:

1. The preferred learning modalities have a strong association with the students with severe and profound hearing loss. Further the students with profound hearing loss primarily preferred a combination of 'auditory - visual' learning modalities but students with severe hearing loss primarily preferred 'auditory' learning modality.
2. Gender has a strong association with preferred learning modalities of the students with severe and profound hearing loss. The boys and the girls having severe hearing loss preferred 'auditory' as their learning modality. On similar lines, the boys and the girls having profound hearing loss preferred 'auditory - visual' as their learning modalities.

This outcome would guide the teachers to select appropriate instructions of the preferred modality of students having severe or profound hearing loss while teaching in special schools or inclusive schools. It would also help parents while teaching their child at home to make learning faster.

REFERENCES

- ASHA (2012). In effects of hearing loss on development. Retrieved from <http://www.asha.org/public/hearing/disorders/effects.htm>
- Ansell, E. & Pagliaro, C. M. (2006). The relative difficulty of signed arithmetic story problems for primary level deaf and hard-of-hearing students. *Journal of Deaf Studies and Deaf Education*, 11, 153 -170.
- Breen, R., and Jonsson, J. (2005). Inequality of Opportunity in Comparative Perspective: Recent Research on Educational Attainment and Social Mobility, *Annual Review of Sociology*, 31:1, 223-243
- Brown, H. (1994). *Principles of language learning and teaching*. 3rd Edition. Englewood Cliffs, NJ: Prentice Hall Regents.
- Cappelli, M., Daniels, T., Durieux-Smith, A., McGrath, P., & Neuss, D. (1995). Social development of children with hearing impairments who are integrated into general education classrooms. *The Volta Review*, 97, 197-208.

- Claxton, C., & Murrell, P.H., (1987). *Learning styles: Implications for improving educational practices*. Association for the Study of Higher Education, Washington.
- Courtin, C. (2000). The impact of sign language on the cognitive development of deaf children: The case of theories of mind. *Journal of Deaf Studies and Deaf Education*, 5, 266-276.
- Epstein, K. I., Hillegeist, E. G. and Grafman, J. (1994) Number processing in deaf college students. *American Annals of Deaf*, 139 (3), 336-347.
- Erber, N. (n.d.). Speech perception and speech development in hearing impaired children. In *Speech of the Hearing impaired*. Hochbery, I. I. & Obberger, M. J. (1983). Universities Park Press.
- Estabrook, W. (2004). *Auditory-Verbal Practices*. Learning to Listen Foundation. (NYGN). Toronto, Canada.
- Felder, R.M. (1993). Reaching the second tier – Learning and teaching styles in college science education. *Journal of College Science Teaching*, 23(5), 286-290.
- Felder, R. M., & Henriques, E. R. (1995). Learning and teaching styles in foreign and second language education. *Foreign Language Annals*, 28(1), 21-31.
- Felder, R.M., & Silverman, L. K. (1988). Learning styles and teaching styles in engineering education. *Journal of Engineering Education*, 78(7), 674-681.
- Gathoo, V. & Singh, K. (2012). Analysis of reading deposits in early intervention program of children with hearing loss. *Journal of NCED*, 4(1).
- Gregory, S. (1986). Bilingualism and the education of deaf children. *Proceedings of the conference on Bilingualism and the Education of Deaf Children: Advances in Practice* (pp. 18-30). United Kingdom: University of Leeds.
- Goldberg and Richburg (2004). Minimal hearing impairment: Major myths with more than minimal implications. *Communication disorders quarterly*, 25:152- 60.
- John T. E. Richardson, Marschark, M. Sarchet, T. Sapere, P. (2010). Deaf and Hard-of-Hearing Students' Experiences in Mainstream and Separate Postsecondary Education. *The Journal of Deaf Studies and Deaf Education*, 15, (4), 358-382, <https://doi.org/10.1093/deafed/enq030>
- Kinsella, K. (1996). Designing group work that supports and enhances diverse classroom work style. *TESOL Journal*, 6(1) 24- 31
- Kluwin, T. N. and Moores, D. F. (1985) The effects of integration on the mathematics achievement of hearing-impaired adolescents. *Exceptional Children*, 52, 153-160.
- Kolb, (1976). *Learning Style Inventory*. Technical Manual. (Massachusetts, Institute for Development. (New Jersey. Prentice- Hall Inc.)
- Kreitner, R. and Kiniki, A. (2001). *Organizational Behaviour*. Boston: Irwin McGraw-Hill.
- Logan, K., & Thomas, P. (2002). *Learning styles in distance education students learning to program*. In J. Kuljis, L. Baldwin & R. Scobie (Eds.), *Proceedings of the 14th Workshop of the Psychology of Programming Interest Group*, (pp. 29-44), Brunel University.
- Marschark, M., Knoors H., (2012). Educating Deaf Children: Language, Cognition and Learning. *Deafness & Education International*. Vol. 14 No. 3.
- Marschark, M., Leigh, G., Sapere, P., Burnham, D., Convertino, C., Stinson, M., Knoors, H., Vervloed, M. P. J., & Noble, W. (2006). Benefits of sign language interpreting and text alternatives to classroom learning by deaf students. *Journal of Deaf Studies and Deaf Education*, 11, 421-437. doi:10.1093/deafed/enl013
- Marschark, M., Paivio, A., Spencer, L. J., Durkin, A., Borgna, G., Convertino, C., & Machmer, E. (2017). Don't Assume Deaf Students are Visual Learners. *Journal of developmental and physical disabilities*, 29(1), 153-171. doi:10.1007/s10882-016-9494-0
- Marschark, M., Shaver, D. M., Nagle, K. M., & Newman, L. (2015). Predicting the academic achievement of deaf and hard-of-hearing students from individual, household, communication, and educational factors. *Exceptional Children*, 81 (3) 350-369
- Marschark, M., Sapere, P., Convertino, C., Mayer, C., Wauters, L., & Sarchet, T. (2009). Are deaf students' reading challenges really about reading? *American Annals of the Deaf*, 154, 357-370. doi: 10.1353/aad.0.011

- Marschark M and Wauters L. (2008). Language Comprehension and Learning by Deaf Students. In book Deaf Cognition. Oxford University Press, Inc.
DOI: 10.1093/acprof:oso/9780195368673.003.0012
- Moeller, Tomblin, Yoshinaga-Itano, C., Connor, C. & Jerger, S. (2007). Current state of knowledge: Language and literacy of children with hearing impairment. *Ear & Hearing*, 28: 740-753.
- Novin, A.M., Arjomand, L.H., & Jourdan, L. (2003). An investigation into preferred learning styles of accounting, management, marketing and general business majors. *Teaching and Learning*, 18(1), 24-31.
- Riding, R.J., & Sadler-Smith, E. (1992). Type of instructional material, cognitive style and learning performance. *Educational Studies*, 18(3), 323-340.
- Right Persons with Disabilities (RPWD), (28 December, 2016) Retrieved from <http://www.disabilityaffairs.gov.in/upload/uploadfiles/files/RPWD%20ACT%20>
- Risberg, A. (1976). Diagnostic rhyme test for speech audiometry with severely hard of hearing and profoundly deaf children. *KTH Q. Prog. Rep.* 2-3; 40-48
- RTE (2009) of The Ministry of Human Resource Development (MHRD) (27 october, 2017) Retrieved from http://mhrd.gov.in/sites/uploadfiles/mhrd/files/uploaddocument/RTE_2nd.pdf
- Sree Nidhi, S. K. & Chinyi, T. (2017). Styles of Learning VAK. *IJIRMF*. 3. 17 - 25
- Schick, B., de Villiers, P., de Villiers, J., & Hoffmeister, R. (2007). Language and theory of mind: A study of deaf children. *Child Development*, 78, 376-396.
- Shinde, B. (2009). Comparative study of noise levels and effects in special and inclusive schools. Unpublished M.Ed. (HI) Dissertation. 2009. AYJNIHH, University of Mumbai.
- Singleton, J. L., & Morgan, D. D. (2006). Natural signed language acquisition within the social context of the classroom. In B. Schick, M. Marschark, & P. E. Spencer (Eds.), *Advances in the sign language development of deaf children* (pp. 344-375). New York, NY: Oxford University Press. doi.org/10.1093/acprof:oso/9780195180947.003.0014
- Strassman, B. (1997). Metacognition and reading in children who are deaf: A review of the research. *Journal of Deaf Studies and Deaf Education*, 2, 140-149.
- Villa, R. A., and Thousand, J. S. (2005). Creating an inclusive school. ASCD Vocabulary Dictionary, (n.d) <https://www.vocabulary.com/dictionary/concept>
- Wood, H. A. et al. (1983) The mathematical achievements of deaf children from different educational environments. *Journal of Educational Psychology*, 54, 254-264.



Jignya Shah

Ph.D.Scholar, Department of Education, A.Y. J. National Institute for the Speech and Hearing Disabilities (Divyangjan), Mumbai.



Dr. Varsha Gathoo

Head of the Department, Department of Education, A. Y. J. National Institute for the Speech and Hearing Disabilities (Divyangjan), Mumbai.