

**SURVEY OF ACCESSIBILITY TO STUDENTS WITH HEARING IMPAIRMENT  
IN INCLUSIVE EDUCATIONAL SET-UPS**

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**ALL INDIA INSTITUTE OF SPEECH AND HEARING**

**MANASAGANGOTHRI, MYSURU-570006**

**MAY, 2015**



**DEDICATED TO....  
MY SWEET DAUGHTER "HAARIKA"  
& MY FAMILY**

## **CERTIFICATE**

This is to certify that this dissertation entitled “**Survey of Accessibility to Students with Hearing Impairment in Inclusive Educational Set-ups**” is a bonafide work submitted as a part fulfilment of the degree of Master of Special Education (Hearing Impairment) of the student with Registration Number 14MSD003. This has been carried out under the guidance of a faculty of this institute and has not been submitted earlier to any other University for the award of any other Diploma or Degree.

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**CERTIFICATE**

This is to certify that this dissertation entitled “**Survey of Accessibility to Students with Hearing Impairment in Inclusive Educational Set-ups**” has been prepared under my supervision and guidance. It is also certified that this has not been submitted earlier to any other University for the award of any other Diploma or Degree.

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**DECLARATION**

This dissertation entitled “**Survey of Accessibility to Students with Hearing Impairment in Inclusive Educational Set-ups**” is the result of my own study under the guidance of Dr. Alok Kumar Upadhyay, Reader in Special Education, All India Institute of Speech and Hearing, Mysore, and has not been submitted earlier to any other University for the award of any other Diploma or Degree.

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## Chapter 1

### **Introduction**

The vision is of providing quality education for all with special focus on marginalized and disadvantaged groups. The underpinnings of these focus themes would be based on a rights-based and learner-centric approach.

The goals of education are the same for all children provided that these goals are balanced and brought in harmony with the individual needs. Inclusion means the process of educating children with special educational needs alongside their peers in mainstream schools (N.C.F.2005). A school can provide a good education to all pupils irrespective of their varying abilities. All children are treated with respect and ensured equal opportunities to learn together.

Inclusive education means that a school can provide a good education to all pupils irrespective of their varying abilities. All children are treated with respect and ensured equal opportunities to learn together.

#### **1.1. International Efforts to Inclusive Education**

Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all on the basis of merit. (Article 26; 1, United Nations Universal Declaration of Human Rights 1948)

“Regular schools with inclusive orientation are the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society and achieving education for all: moreover, they provide an effective education to the majority of

children and improve the efficiency and ultimately the cost effectiveness of the entire education system” (Article 2, Salamanca Framework for Action 1994).

“In order to attract and retain children from marginalized and excluded group education system should respond flexibly..... Education system must be inclusive ...actively seeking out children who are most enrolled and responding flexibly to the circumstances and needs of all learners” (Dakar Framework for Action, 2000).

### **1.2. National efforts towards inclusive education**

The Constitution of India directed the state to ensure provision of basic education to all children up to the age of 14 years. The education of people with disabilities was, however, not explicit in the early constitutional provisions except for guaranteeing similar rights for people with disabilities as other members of society.

The Education Commission, 1966 Known as Kothari Commission showed the necessity to the education of differently abled children. In 1974, integrated education was clearly emphasized under the scheme for Integrated Education for Disabled Children (IEDC). The goal of providing basic education for all, the National Policy on Education (1986) and its follow-up actions have been major milestone.

The Rehabilitation Council of India Act 1992 commences a training programme for the development of professionals to respond to the needs of students with disabilities. The ratification of the People with Disability Act (P.W.D.) 1995 gives legislative support. This act formulates it compulsory to provide free education to children with disabilities in an appropriate environment until the age of 18 years. In 1999, the government passed the National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities Act for the economic rehabilitation of people with disabilities. These acts have been instrumental in bringing about a perceptible change/ improvement in the attitude of government, NGOs and

people with disabilities. In recent years, two major programmes have been started by the government for accomplishing the goals of Universalization of Elementary Education (UEE): the District Primary Education Programme (DPEP) in 1994 and the Sarva Shiksha Abhiyan (SSA) in 2002.

For many educators, the term is viewed as a most positive description of efforts to include children with disabilities in genuine and comprehensive ways in the total life of schools. At the same time all educators as shared responsibility and privilege must view the education of children with disabilities as part of their duties. Most important is that every child must have a place and be made welcome to the goal of the Universalization of Elementary Education (UEE). This has given a new twist to the education of children with special needs.

### **1.3 Need of the Study**

There are several studies that have addressed the question whether these special education efforts meet the needs of children with disabilities and comply with the conviction of inclusion, full participation, citizenship (Canadian Teachers Federation, 1981, Pivick et al. 2002). It has been advocated that students with the disabilities learn alongside their age appropriate peers in general education classrooms with appropriate aids and services (Gilhool, 1989).

Inclusion requires that teachers, parents, and children be prepared for innovation (Peck, Hayden, Wandshneider, Peterson, & Richarz, 1989). These preparations include not only making environmental modifications ensure programs are physically accessible by children with disabilities, but also enhancing all participants' knowledge about children with special needs and appropriate instructional strategies, and developing positive attitudes towards inclusion (Dinnebeil, McInerney, Fox, & Juchartz-Pendry, 1998; Irwin et al., 2000).

However inclusive education is in a greater crisis than integrated education in terms of schools related accessibility. The accessibility may be different kinds that prevent participation of students with hearing impairment in spectrum of activities those go on in the school. How accessibility is related to participation is focused below:

The school is a highly complex environment. We shall classify its many variables which are directly or indirectly responsible for inaccessible education to children with hearing impairment.

## **1.4 School environment**

### *1.4.1. Classroom environment*

Classroom acoustics are essential for children with hearing impairment. Noise levels in each classroom should be kept as low down as is practical. There is definitely no elementary school class where no noise is present. For the child with hearing impairment, even with the utilization of personal amplification, the effects of these conditions are even more distressing. It is important to keep in mind the boundaries of personal hearing aids. All sounds are amplified, thus ruling out the child with hearing impairment from sorting out the significant from the insignificant. Teachers should be aware that hearing aids do not correct a hearing loss but only assist in improving awareness or discrimination. The presence of excessive noise often counteracts the benefits of these improvements.

### *1.4.2. Communication*

All children with hearing impairment are more dependent on Speech reading skill. The success of speech reading is based on the principle of redundancy. Speech reading is not absolute. There are many more speech movements per second that the eye is capable of

perceiving. In addition, many speech movements can confuse a child and certainly affect the accuracy of comprehension.

#### *1.4.3. Reverberation*

“Reverberation” refers to the continuance, or persistence, of sound waves within a room as they are reflected off of surfaces in the classroom.

#### *1.4.4. Seating arrangement to children with hearing impairment*

The importance of preferential seating cannot be underestimated. The seating placement of a child with a hearing impairment certainly depends in part on the type of hearing loss, but it also is important to look at classroom format and activity.

After studying so many things regarding physical environment and teacher’s behavior those are directly influence on accessibility to children with hearing impairment. Therefore the researcher intended to carry out a study to find out level of Accessibility to children with hearing impairment in Inclusive schools. The research was undertaken under the topic” Survey of accessibility to Students with hearing impairment in inclusive educational set ups.

### **1.5. Statement of the problem**

This research proposes to do a survey on accessibility to Students with hearing impairment in inclusive educational set ups and the reasons regarding accessibility of students with hearing impairment in primary school.

### **1.6. Operational definitions of key term**

Accessibility: these aspects of the environment either restrict or facilitate on individuals ability to function freely in his or her community.

Children with hearing impairment: students having hearing loss in better ear in conversational frequencies shall be considered for the present study.

Inclusive Educational Setup: Refers to school where students with disabilities attend educational progress like any student without disabling condition. In the present study the primary school under Sarva Shiksha Abhiyan where hearing impaired students are enrolled shall be referred as inclusive educational set up.

### **1.6. Objectives of the study**

1. This study proposes to carry out a sample survey in selected primary school of inclusive educational set-ups from Mysore city in order to physical investigate the accessibility nature of the selected schools.
2. The major objectives would be achieved through the realization of the following objectives;
3. Development and or adaptation of tool for carrying out accessibility of primary school of inclusive educational setups.
4. Conducting survey access audit in the selected schools.
5. Compilation of report on the accessibility nature of the selected schools.
6. Drafting recommendations for improving existing conditions.

### **1.7 Delimitations of the study**

1. The study was done on only primary schools.
2. The study was done only in the Mysore city runs under the SSA Programs.

## Chapter 2

### **Review of Literature**

Review of literature is very important in the research study. This chapter helps the researcher to understand the earlier research study related to the present work and to search out the information about the authors who has done the research and how they have done the research. Review of literature helps the researcher to plan and examine the research procedure in a proper direction based on the earlier studies. In this chapter the researcher has given a summary of earlier researches which are directly or indirectly related to the present study which is named as “Survey of accessibility to Students with hearing impairment in inclusive educational set ups”.

According to Berg (1986) “Implementing of some structural changes in the classroom, such as the use of sound, absorbing tiles, rugs, and drapes to decrease of classroom noise effectively, children with hearing impairment can understand aural information better than normal set-ups.”

Dinnebeil, Melnerney, Fox, and Juchartz-Pendr (1998) Inclusion requires that teachers, parents and children be prepared for innovation. These preparations include not only making environmental modifications to ensure programs are physical accessible by children with disabilities, but also enhancing all participants knowledge about children with special needs and appropriate instructional strategies, and developing positive attitude towards inclusion .

Hemmingsson and Borell (2000) interviewed students with physical disabilities about their accommodation requires to in relation a specially adapted school for students with disabilities in Sweden. Even in a school designed remove architectural for students with severe physical disabilities, 83% of the students reported unmet accommodation needs, particularly in the areas of reading, remembering, and speaking. This study stresses the requirement to assess and address individual accommodation needs and supports the concept of student reporting.



Hanson et al. (2001) interviewed parents determine their perspective of their children's school experiences in order identify those factors that influenced inclusive placement decisions. Although the majority of parents valued placement of inclusion, concerns about class size, availability of therapeutic services, acceptance by other children, attitudes about the child's disability, as well as teachers' level of training and experience were expressed. Parental opinions (along with those of teachers and therapists) were also garnered examine the environmental influences of children's social experiences in school (Baker & Donnelly, 2001).

Schilting & Schwartz (2004) Many of the researchers proved some specific modification in the physical arrangement (i.e. Changing in seating, adjusting the lighting, materials such as tables, shelves, hooks etc,) can increase academic engagement and decrease disruptive behavior .

Kaufhold (2006) examined an often neglected, but nevertheless equally important, factor in the burnout and attrition rate of teachers of special education. This factor was a lack of school supplies, materials and resources. Educational researchers Able and Sewell concluded, "A reported source of teacher stress included financial constraints and a lack of educational supplies." In addition, they found that teachers of special education often had support their own classroom by purchasing supplies, materials and equipment. Typical out-of-pocket expenditures were spent for instructional supplies and materials, audiovisual aids plus computer software.

UNESCO (2008) its thematic report on barriers to inclusive education highlights Barrier to the inclusion of children with special needs in the mainstream learning environments is the physical barriers in them that prevent these children from accessing or entering the learning environments and or participating in the instructional processes and utilizing their various facilities like any other typically developing learner.

Rajesh (2008) Find out in study on physical environment of four schools that modification in schools be necessary for better education of children with hearing impairment.

Upadhyay A.K. (2009) compared the accessibility characteristics in inclusive and non inclusive setups; the findings clearly indicated difference in environment of both set ups that influencing their functioning.

It is now important to identify either regular or special schools those have changed their philosophy, approach in their services to promote inclusion. The liaison/collaboration with regular school by the special school gives greater advantages to the children in terms positive attitude, support to the parents and flexibility (Singh & Mishra, 2012). It was realized that ongoing resource support by special school is must till the regular schools are not adequately resourced (Mishra, 2014).

## Chapter 3

### **Method**

The present study of research “Survey of accessibility to Students with hearing impairment in inclusive educational set ups. An attempt has been made to examine the accessibilities available at inclusive schools.

#### **3.1. Design of the study**

The selected study was primarily a survey type of evaluative study involving systematic observations of variables by the use of researcher made checklist and systematic procedure.

The study aims to evaluate the accessibility in the inclusive schools to children with hearing impairment. Since the inclusive schools were those schools Government of Karnataka run under S.S.A and all the students with or without disabilities were entitled to get admission.

#### **3.2. Population for the study**

All the Government schools run under S.S.A. of Mysore city where children with special needs and without special need were study together considered as population of the study.

#### **3.3. Sample**

With the available time and resources of the researcher, coverage of all Schools for selection of samples was not convenient and possible. Therefore, purposive sampling technique was used considered to shortlist the Schools.

Researcher selected 5 inclusive educational setup schools which come under government or aided schools under the SSA program, specifically where the children with hearing impairment studying along with typically developing children.

To implementing the checklists each inclusive school was named as inclusive school 1, inclusive school 2, inclusive school 3, inclusive school 4, and inclusive school 5 respectively. Five different teachers had their class periods observed for each school on the physical environment of schools and the teacher behavior respectively.

### **3.4 Tools and Approach**

To solve the purpose of the research the selection or/and development of the appropriate tool being always considered as of prime importance to the success of the study. For the purpose of current study no standardize tests were available but some suitable test were taken into consideration and adapted for the study. Mainly they are teacher/researchers made tests. The checklist taken for the study is as under-

- a) To study the physical environment of the schools for children with hearing impairment.
- b) To study the teacher behavior towards the children with hearing impairment.

### **3.5 .Administering checklist**

The researcher did the following

- A covering letter with appendix for seeking permission was given to the Head of inclusive schools; respectively by the researcher to personally conduct the study.

- And researcher met personally to school head to obtain the permission to conduct the study.
- The study was conducted by the researcher without disturbing the regular class as instructed by the schools head.
- The researcher has observed five different teaching periods on the physical environment and teacher behavior of the respective schools
- Same observation noted the prepared checklist by filling yes/no answers by the researcher.
- Total 25 teachers class periods observed and checklist filled based on the researcher observations
- Based on the filled checklist data was compiled in the score sheet and same were further analyses.

### **3.6 Scoring procedure**

The prepared checklist had option to answer yes/ no questions same answer was written by the researcher based on the personal observation in the respective schools.

1. Positive (Accessible)
  - a) Researcher mark yes – it indicate 1(one) score
  - b) Researcher mark no – it indicate 0 (zero)score
2. Negative (Inaccessible)
  - a) Researcher mark no – it indicate 1(one) score
  - b) Researcher mark yes – it indicate 0 (zero)score

There were two part included in the

1. Part – A-physical environment – 13 (thirteen ) questions

2. Part – B-teacher behavior – 15 (fifteen) questions

Total – 28 (twenty-eight) questions

- The scoring sheets prepared separately for part- A and part –B.
- The percentage was calculated for each question of all the 5 periods to the respective schools.

Overall percentage was calculated for part – A & part – B separately (including all 5 schools).

### **3.7. Data Analysis**

Data collected through the checklist had been analyzed accordingly. Percentage, descriptive and inferential analysis were applied on the checklist to analyze the data.

## Chapter 4

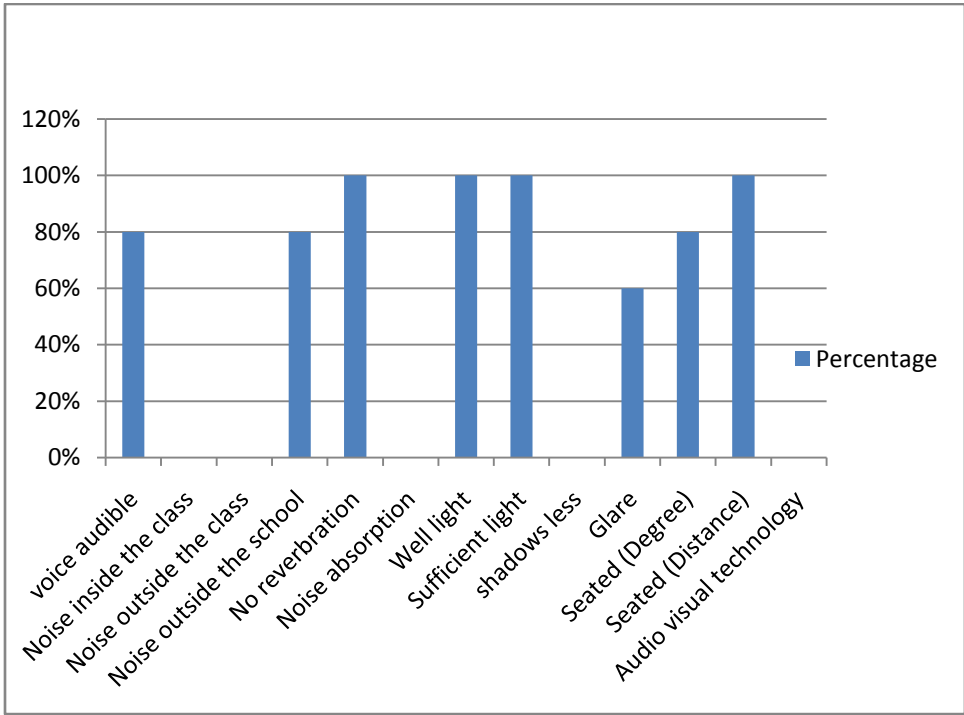
### Result and Discussion

The present study ' survey on accessibility to students with hearing impairment in Inclusive set- ups in Mysore was aimed at preparing a checklist in order to assess the physical environment and teacher behavior of the inclusive schools. It was aimed at administering the checklist on Inclusive schools in Mysore. For this, a 'checklist for assessing physical environment and teacher behavior 'was prepared by the investigator. The checklist was administered in five Inclusive schools in Mysore. The analysis of the data collected and related discussion is presented in this chapter.

**Table 4.1:** *Physical Environment school 1.*

QUESTION NO	T1	T2	T3	T4	T5	TOTAL	PERCENTAGE
1	1	1	0	1	1	4	80%
2	0	0	0	0	0	0	0%
3	0	0	0	0	0	0	0%
4	1	1	1	0	1	4	80%
5	1	1	1	1	1	5	100%
6	0	0	0	0	0	0	0%
7	1	1	1	1	1	5	100%
8	1	1	1	1	1	5	100%
9	0	0	0	0	0	0	0%
10	1	1	1	0	0	3	60%
11	0	1	1	1	1	4	80%

12	1	1	1	1	1	5	100%
13	0	0	0	0	0	0	0%



**Figure 4.1: Physical Environment school 1**

The above figure (4.1) clearly depicts that the areas noise absorption, and audio visual technology have been rated the lowest (0%) by the physical environment of inclusive school. However they perceive the areas of teacher voice, lighting, seating arrangement (distance) has very well (100%)

**Discussion**

The above figure (4.1) clearly depicts accessibility of Audible voice in school 1 is 80%. Audible voice of teacher is essential for a child with hearing impairment to better accessibility.



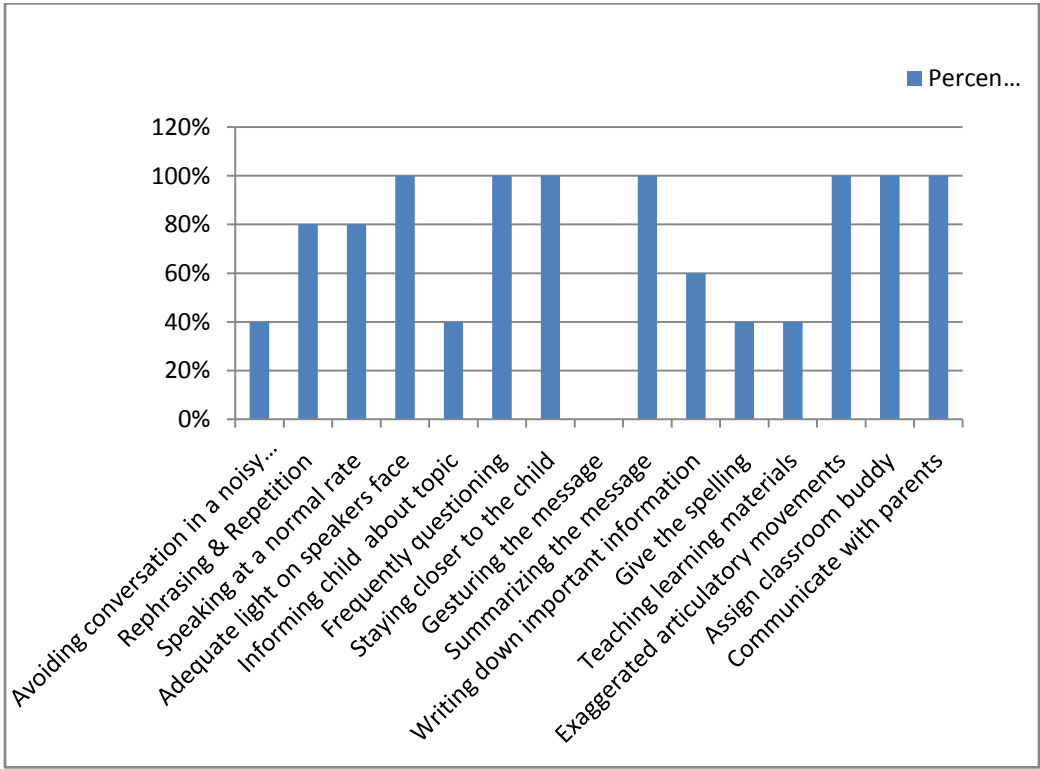
This aspect has to improve in classroom. The noise of classroom whether inside or outside were respectively 0%, 0%. The noise of classroom whether inside or outside directly influence the better accessibility for a children with hearing impairment. Both types of noises should be minimizing for better accessibility. The noise outside the school was 80%.The noise outside the school was satisfactory regarding better accessibility. No Reverberation level was 100%.No Reverberation found in the school. Noise absorption was 0%. Noise absorption was very low, that should be more for better accessibility for children with hearing impairment. Lighting facility was 100%.Lighting facility was good in the classrooms. Glaring of light was 60%.Glaring of light was higher; it should be removing for better accessibility for lip reading, seeing the board properly.

Seating arrangements were good according to degree & distance respectively 80%, 100%. Seating arrangements were good according to degree & distance. Last aspect of checklist i.e. use of audio visual aids was 0% ,that was abysmal condition and use of audio visual aids is very important for better understanding of any topic for children with hearing impairment.

**Table 4.2:** *Teacher behavior school 1.*

QUESTION NO	T1	T2	T3	T4	T5	TOTAL	PERCENTAGE
1	1	1	0	0	0	2	40%
2	1	1	0	1	1	4	80%
3	1	1	0	1	1	4	80%
4	1	1	1	1	1	5	100%
5	1	1	0	0	0	2	40%
6	1	1	1	1	1	5	100%
7	1	1	1	1	1	5	100%

8	0	0	0	0	0	0	0%
9	1	1	1	1	1	5	100%
10	0	1	0	1	1	3	60%
11	1	1	0	0	0	2	40%
12	0	0	0	1	1	2	40%
13	1	1	1	1	1	5	100%
14	1	1	1	1	1	5	100%
15	1	1	1	1	1	5	100%



**Figure 4:2: Teacher behavior school 1**

The above figure (4.2) clearly depicts that the areas gesturing the message and exaggerated articulator movements have been rated the lowest (0%) by the teacher behavior of inclusive school . however they perceive the areas of adequate light on speakers face ,ongoing

questions, staying closer, summarizing, parents meeting & typical student supports has very good (100%)

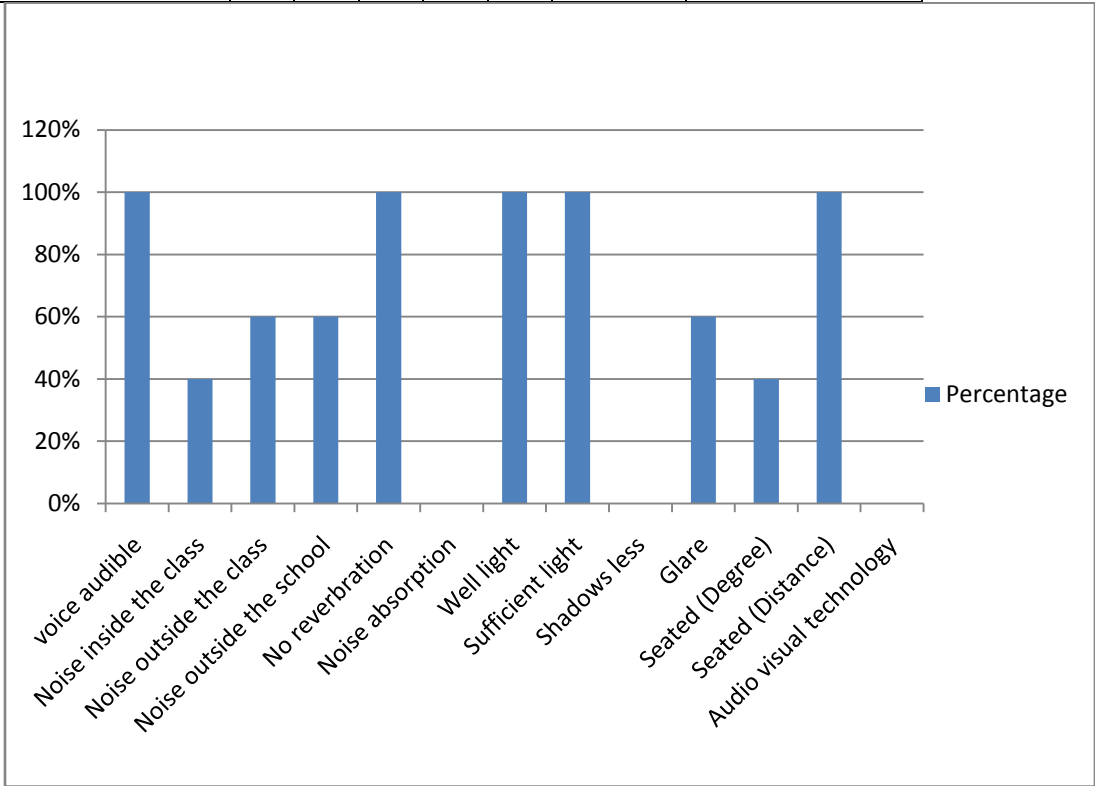
## Discussion

The teachers were involved to conversation in noisy environment (40%). That was not appropriate for better hearing accessibility .Teachers were often used to rephrasing and repetition (80%) and it is important for better accessibility. Speaking rate was good (80%). The teachers were always used to stand in such a way that light could come on their face. Teachers were not emphasis on topic and vocabulary (40%). Teachers were continuously involved in ongoing evaluation (100%). Teachers were staying closure (100%) to the children with hearing impairment. The use of gesturing in teaching was absent (0%).Summarizing the message (100%) was good by the teachers. Writing down component (60%) has to improve according to children with hearing impairment. Pronunciation & repeating to spelling when the child misunderstanding the word was less (40%) that has to improve. Use of teaching learning material by teachers was abysmal (40%). Teachers were not doing the exaggerated articulator movement (100%). The use of classroom buddy was very good (100%) . Parent meetings (100%) were regularly organized.

**Table 4.3:** *physical environment school 2*

QUESTION NO	T1	T2	T3	T4	T5	TOTAL	PERCENTAGE
1	1	1	1	1	1	5	100%
2	1	1	0	0	0	2	40%
3	1	1	1	0	0	3	60%

4	1	1	1	0	0	3	60%
5	1	1	1	1	1	5	100%
6	0	0	0	0	0	0	0%
7	1	1	1	1	1	5	100
8	1	1	1	1	1	5	100%
9	0	0	0	0	0	0	0%
10	1	1	1	0	0	3	60%
11	0	0	0	1	1	2	40%
12	1	1	1	1	1	5	100%
13	0	0	0	0	0	0	0%



**Figure 4.3: Physical environment school 2**

The above figure (4.3) clearly depicts that the areas noise absorption, and audio visual technology have been rated the lowest (0%) by the physical environment of inclusive school.

However they perceive the areas of teacher voice, lighting, seating arrangement (distance) has very well (100%)

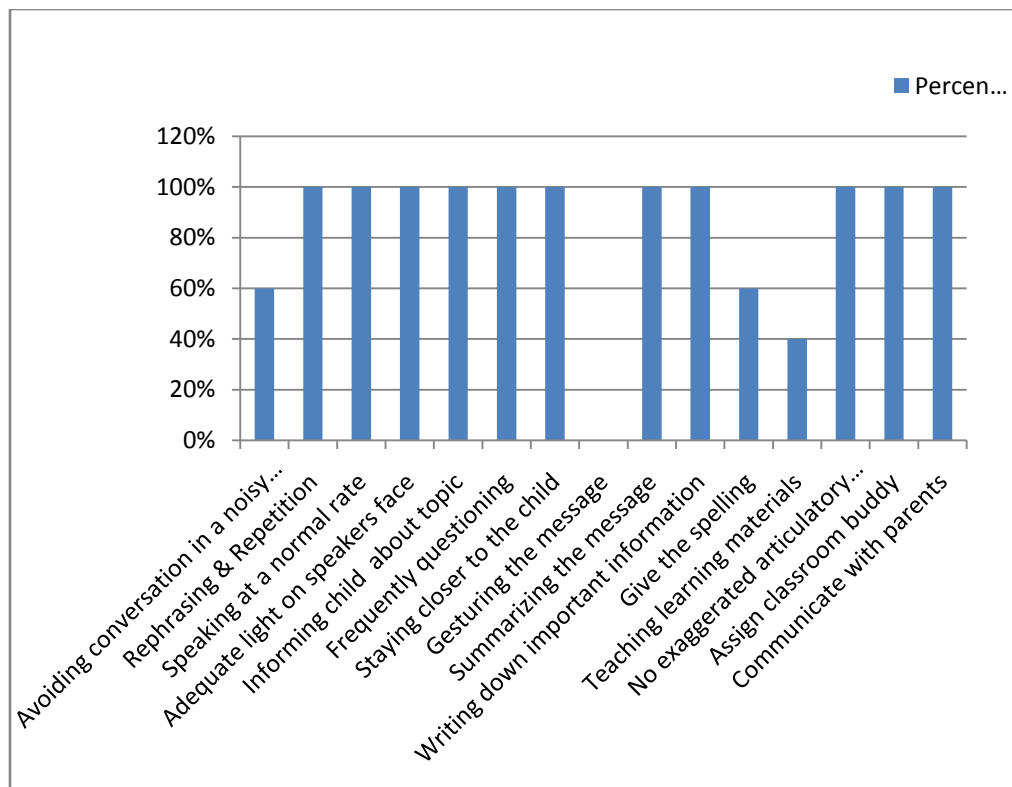
## Discussion

Accessibility of Audible voice in school 2 is 100%. Audible voice of teacher is essential for a child with hearing impairment to better accessibility. This aspect has to improve in classroom. The noise of classroom whether inside or outside were respectively 40%, 60%. The noise of classroom whether inside or outside directly influence the better accessibility for a children with hearing impairment. Both types of noises should be minimizing for better accessibility. The noise outside the school was 60%. The noise outside the school was satisfactory regarding better accessibility. No Reverberation level was 100%. No Reverberation found in the school. Noise absorption was 0%. Noise absorption was very low, that should be more for better accessibility for children with hearing impairment. Lighting facility was 100%. Lighting facility was good in the classrooms. Glaring of light was 60%. Glaring of light was higher; it should be removing for better accessibility for lip reading, seeing the board properly. Seating arrangements were good according to degree & distance respectively 40%, 100%. Seating arrangements were good according to degree & distance. Last aspect of checklist i.e. use of audio visual aids was 0% ,that was abysmal condition and use of audio visual aids is very important for better understanding of any topic for children with hearing impairment.

**Table 4.4:** *Teacher behavior school 2.*

QUESTION NO	T1	T2	T3	T4	T5	TOTAL	PERCENTAGE
1	1	1	1	0	0	3	60%

2	1	1	1	1	1	5	100%
3	1	1	1	1	1	5	100%
4	1	1	1	1	1	5	100%
5	1	1	1	1	1	5	100%
6	1	1	1	1	1	5	100%
7	1	1	1	1	1	5	100%
8	0	0	0	0	0	0	0%
9	1	1	1	1	1	5	100%
10	1	1	1	1	1	5	100%
11	1	1	1	0	0	3	60%
12	0	0	0	1	1	2	40%
13	1	1	1	1	1	5	100%
14	1	1	1	1	1	5	100%
15	1	1	1	1	1	5	100%



**Figure 4:4: Teacher behavior school 2**

The above figure (4.4) clearly depicts that the areas gesturing the message and exaggerated articulator movements have been rated the lowest (0%) by the teacher behavior of inclusive school. However, they perceive the areas of adequate light on speakers face, ongoing questions, staying closer, summarizing, parents meeting & typical student supports has very good (100%)

### **Discussion**

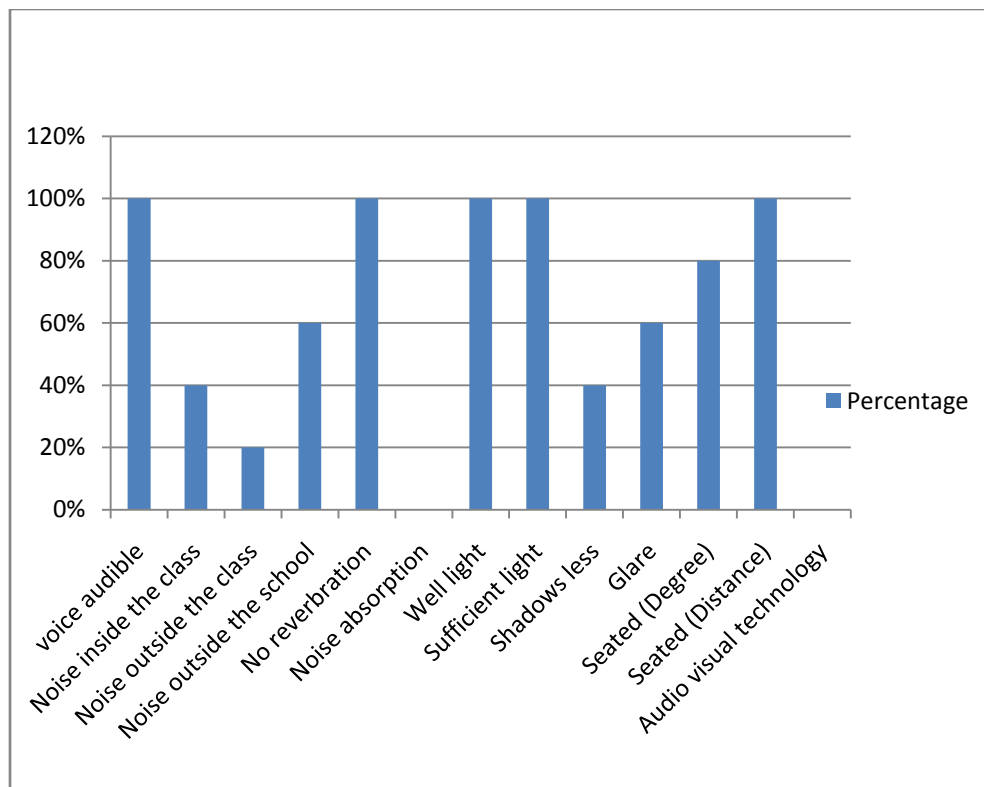
The teachers were involved to conversation in noisy environment (60%). That was not appropriate for better hearing accessibility. Teachers were often used to rephrasing and repetition (100%) and it is important for better accessibility. Speaking rate was good (100%). The teachers were always used to stand in such a way that light could come on their face. Teachers were not emphasis on topic and vocabulary (100%). Teachers were continuously involved in ongoing evaluation (100%). Teachers were staying closure (100%) to the children with hearing

impairment. The use of gesturing in teaching was absent (0%). Summarizing the message (100%) was good by the teachers. Writing down component (100%) has to improve according to children with hearing impairment. Pronunciation & repeating to spelling when the child misunderstands the word was less (60%) that has to improve. Use of teaching learning material by teachers was abysmal (40%). Teachers were not doing the exaggerated articulator movement (100%). The use of classroom buddy was very good (100%). Parent meetings were regularly organized. (100%)

**Table 4.5:** *Physical environment school 3*

QUESTION NO	T1	T2	T3	T4	T5	TOTAL	PERCENT AGE
1	1	1	1	1	1	5	100%
2	0	0	1	1	0	2	40%
3	1	0	0	0	0	1	20%
4	1	0	1	1	0	3	60%
5	1	1	1	1	1	5	100%
6	0	0	0	0	0	0	0%
7	1	1	1	1	1	5	100%
8	1	1	1	1	1	5	100%
9	1	1	0	0	0	2	40%
10	1	1	1	0	0	3	60%
11	1	0	1	1	1	4	80%
12	1	1	1	1	1	5	100%
13	0	0	0	0	0	0	0%





**Figure 4:5: Physical environment school 3**

The above figure (4.5) clearly depicts that the areas noise absorption, and audio visual technology have been rated the lowest (0%) by the physical environment of inclusive school. However they perceive the areas of teacher voice, lighting, seating arrangement (distance) has very well (100%)

## **Discussion**

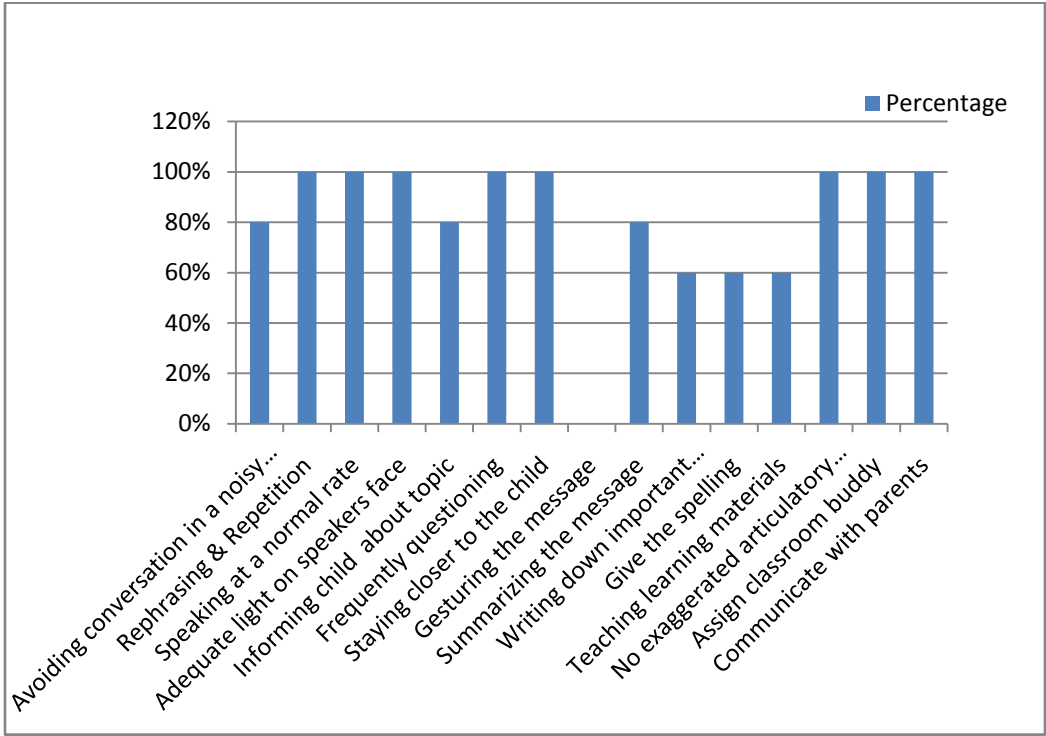
Accessibility of Audible voice in school 3 is 100%. Audible voice of teacher is essential for a child with hearing impairment to better accessibility. This aspect has to improve in classroom. The noise of classroom whether inside or outside were respectively 40%, 20%. The noise of classroom whether inside or outside directly influence the better accessibility for a children with hearing impairment. Both types of noises should be minimizing for better accessibility. The noise outside the school was 60%. The noise outside the school was

satisfactory regarding better accessibility. No Reverberation level was 100%.No Reverberation found in the school. Noise absorption was 0%. Noise absorption was very low, that should be more for better accessibility for children with hearing impairment. Lighting facility was 100%.Lighting facility was good in the classrooms. Glaring of light was 60%.Glaring of light was higher; it should be removing for better accessibility for lip reading, seeing the board properly. Seating arrangements were good according to degree & distance respectively 80%, 100%. Seating arrangements were good according to degree & distance. Last aspect of checklist i.e. use of audio visual adds was 0% ,that was abysmal condition and use of audio visual aids is very important for better understanding of any topic for children with hearing impairment.

**Table 4.6:** *Teacher behavior school 3*

QURSTION NO	T1	T2	T3	T4	T5	TOTAL	PERCENT AGE
1	1	0	1	1	1	4	80%
2	1	1	1	1	1	5	100%
3	1	1	1	1	1	5	100%
4	1	1	1	1	1	5	100%
5	1	0	1	1	1	4	80%
6	1	1	1	1	1	5	100%
7	1	1	1	1	1	5	100%
8	0	0	0	0	0	0	0%
9	1	0	1	1	1	4	80%
10	0	0	1	1	1	3	60%
11	1	0	1	1	0	3	60%

12	0	0	1	1	1	3	60%
13	1	1	1	1	1	5	100%
14	1	1	1	1	1	5	100%
15	1	1	1	1	1	5	100%



**Figure 4:6: Teacher behavior school 3**

The above figure (4.6) clearly depicts that the areas gesturing the message and exaggerated articulator movements have been rated the lowest (0%) by the teacher behavior of inclusive school . however they perceive the areas of rephrasing and repetition, speaking rate, adequate light on speakers face ,ongoing questions, staying closer, parents meeting & typical student supports has very good (100%)

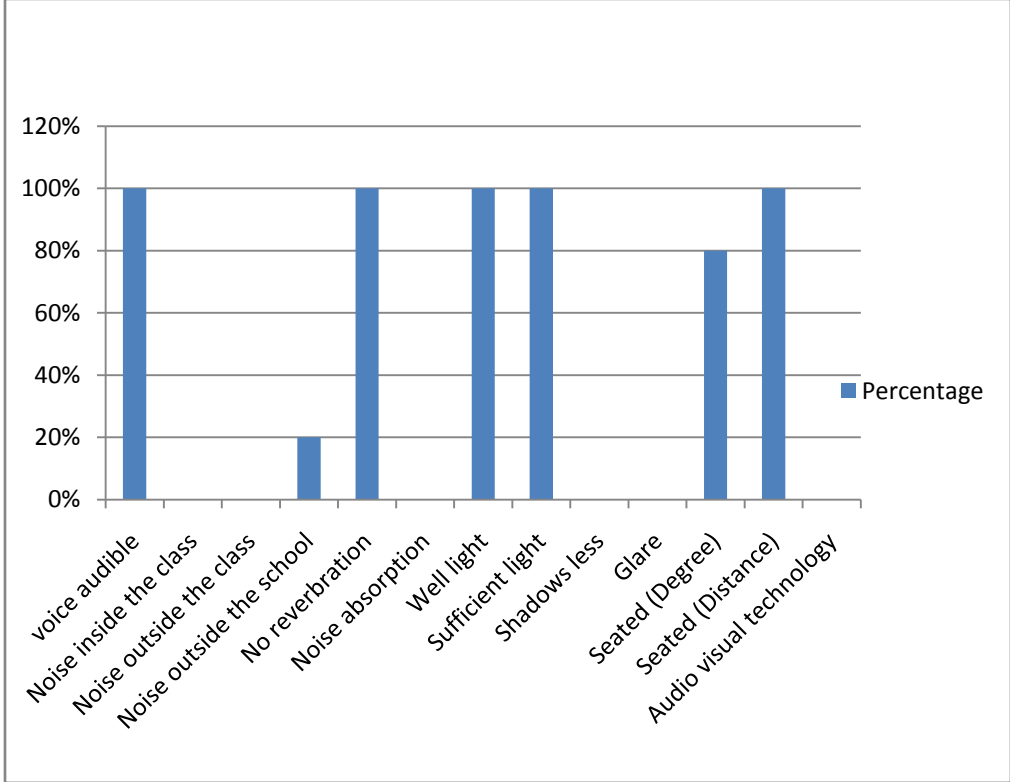
## Discussion

The teachers were involved to conversation in noisy environment (80%). That was not appropriate for better hearing accessibility .Teachers were often used to rephrasing and repetition (100%) and it is important for better accessibility. Speaking rate was good (100%). The teachers were always used to stand in such a way that light could come on their face. Teachers were not emphasis on topic and vocabulary (80%). Teachers were continuously involved in ongoing evaluation (100%). Teachers were staying closure (100%) to the children with hearing impairment. The use of gesturing in teaching was absent (0%).Summarizing the message (80%) was good by the teachers. Writing down component (60%) has to improve according to children with hearing impairment. Pronunciation & repeating to spelling when the child misunderstanding the word was less (60%) that has to improve. Use of teaching learning material by teachers was abysmal (60%). Teachers were not doing the exaggerated articulator movement (100%). The use of classroom buddy was very good (100%). Parent meetings (100%) were regularly organized.

**Table 4.7:** *Physical environment school 4*

QUESTION NO	T1	T2	T3	T4	T5	TOTAL	PERCENT AGE
1	1	1	1	1	1	5	100%
2	0	0	0	0	0	0	0%
3	0	0	0	0	0	0	0%
4	0	0	0	1	0	1	20%
5	1	1	1	1	1	5	100%
6	0	0	0	0	0	0	0%
7	1	1	1	1	1	5	100%

8	1	1	1	1	1	5	100%
9	0	0	0	0	0	0	0%
10	0	0	0	0	0	0	0%
11	1	1	1	0	1	4	80%
12	1	1	1	1	1	5	100%
13	0	0	0	0	0	0	0%



**Figure 4:7: Physical environment school 4**

The above figure (4.7) clearly depicts that the areas noise (in the classroom, outside classroom, outside school), noise absorption, and audio visual technology have been rated the lowest (0%) by the physical environment of inclusive school. However they perceive the areas of teacher voice, lighting, seating arrangement (distance) has very well (100%)

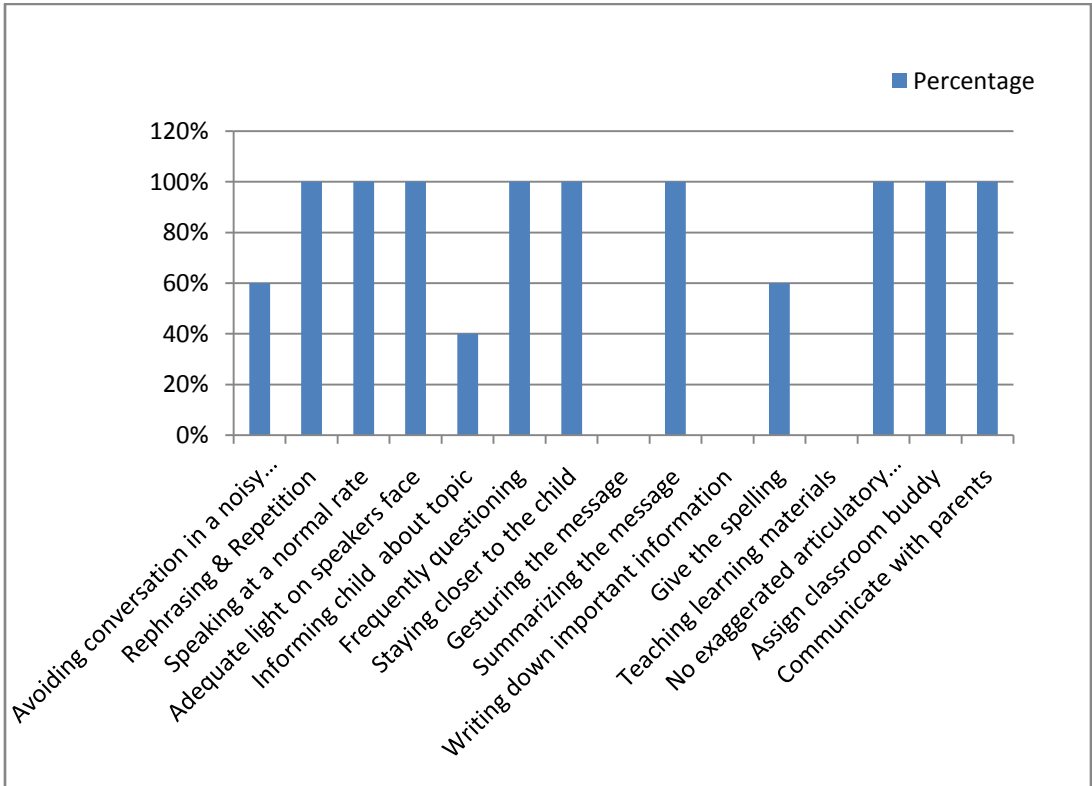
## Discussion

Accessibility of Audible voice in school 4 is 100%. Audible voice of teacher is essential for a child with hearing impairment to better accessibility. This aspect has to improve in classroom. The noise of classroom whether inside or outside were respectively 0%, 0%. The noise of classroom whether inside or outside directly influence the better accessibility for a children with hearing impairment. Both types of noises should be minimizing for better accessibility. The noise outside the school was 20%. The noise outside the school was satisfactory regarding better accessibility. No Reverberation level was 100%. No Reverberation found in the school. Noise absorption was 0%. Noise absorption was very low, that should be more for better accessibility for students with hearing impairment. Lighting facility was 100%. Lighting facility was good in the classrooms. Glaring of light was 0%. Glaring of light was higher; it should be removing for better accessibility for lip reading, seeing the board properly. Seating arrangements were good according to degree & distance respectively 80%, 100%. Seating arrangements were good according to degree & distance. Last aspect of checklist i.e. use of audio visual aids was 0%, that was abysmal condition and use of audio visual aids is very important for better understanding of any topic for students with hearing impairment.

**Table 4.8:** *Teacher behavior school 4*

QUESTION NO	T1	T2	T3	T4	T5	TOTAL	PERCENT AGE
1	1	1	0	0	1	3	60%
2	1	1	1	1	1	5	100%
3	1	1	1	1	1	5	100%
4	1	1	1	1	1	5	100%

5	1	1	0	0	0	2	40%
6	1	1	1	1	1	5	100%
7	1	1	1	1	1	5	100%
8	0	0	0	0	0	0	0%
9	1	1	1	1	1	5	100%
10	0	0	0	0	0	0	0%
11	1	1	0	1	0	3	60%
12	0	0	0	0	0	0	0%
13	1	1	1	1	1	5	100%
14	1	1	1	1	1	5	100%
15	1	1	1	1	1	5	100%



#### **Figure 4:8: Teacher behavior school 4**

The above figure (4.8) clearly depicts that the areas gesturing the message, writing down, teaching learning materials and exaggerated articulator movements have been rated the lowest (0%) by the teacher behavior of inclusive school. however they perceive the areas of rephrasing and repetition, speaking rate, adequate light on speakers face, ongoing questions, staying closer, parents meeting & typical student supports has very good (100%)

#### **Discussion**

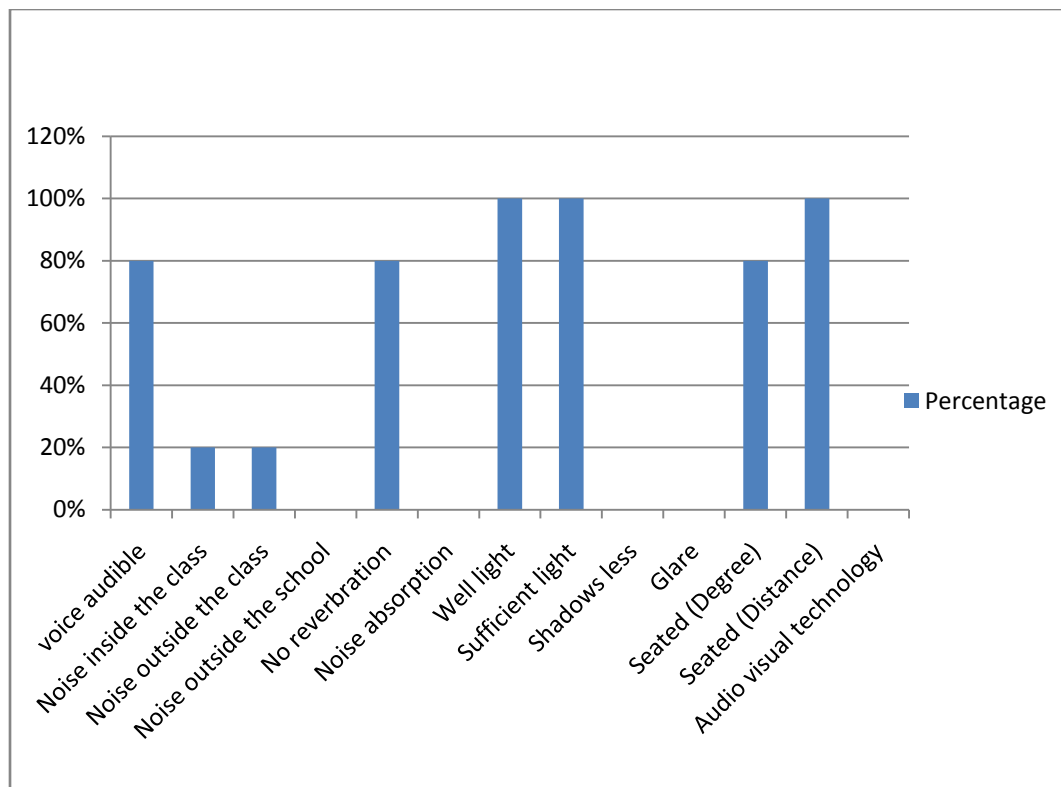
The teachers were involved to conversation in noisy environment (60%). That was not appropriate for better hearing accessibility .Teachers were often used to rephrasing and repetition (100%) and it is important for better accessibility. Speaking rate was good (100%). The teachers were always used to stand in such a way that light could come on their face. Teachers were not emphasis on topic and vocabulary (40%). Teachers were continuously involved in ongoing evaluation (100%). Teachers were staying closure (100%) to the children with hearing impairment. The use of gesturing in teaching was absent (0%).Summarizing the massage (100%) was good by the teachers. Writing down component (0%) has to improve according to children with hearing impairment. Pronunciation & repeating to spelling when the child misunderstanding the word was less (60%) that has to improve. Use of teaching learning material by teachers was abysmal (0%). Teachers were not doing the exaggerated articulator movement (100%). The use of classroom buddy was very good (100%). Parent meetings (100%) were regularly organized.

**Table 4.9:** *Physical environment school 5*

QUESTION	T1	T2	T3	T4	T5	TOTAL	PERCENT
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NO							AGE
1	1	0	1	1	1	4	80%
2	0	0	0	0	1	1	20%
3	0	0	0	1	0	1	20%
4	0	0	0	0	0	0	0%
5	1	0	1	1	1	4	80%
6	0	0	0	0	0	0	0%
7	1	1	1	1	1	5	100%
8	1	1	1	1	1	5	100%
9	0	0	0	0	0	0	0%
10	0	0	0	0	0	0	0%
11	0	1	1	1	1	4	80%
12	1	1	1	1	1	5	100%
13	0	0	0	0	0	0	0%



**Figure 4:9: Physical environment school 5**

The above figure (4.9) clearly depicts that the areas noise (outside school), noise absorption, and audio visual technology have been rated the lowest (0%) by the physical environment of inclusive school. However they perceive the areas of lighting, seating arrangement (distance) has very well (100%)

### **Discussion**

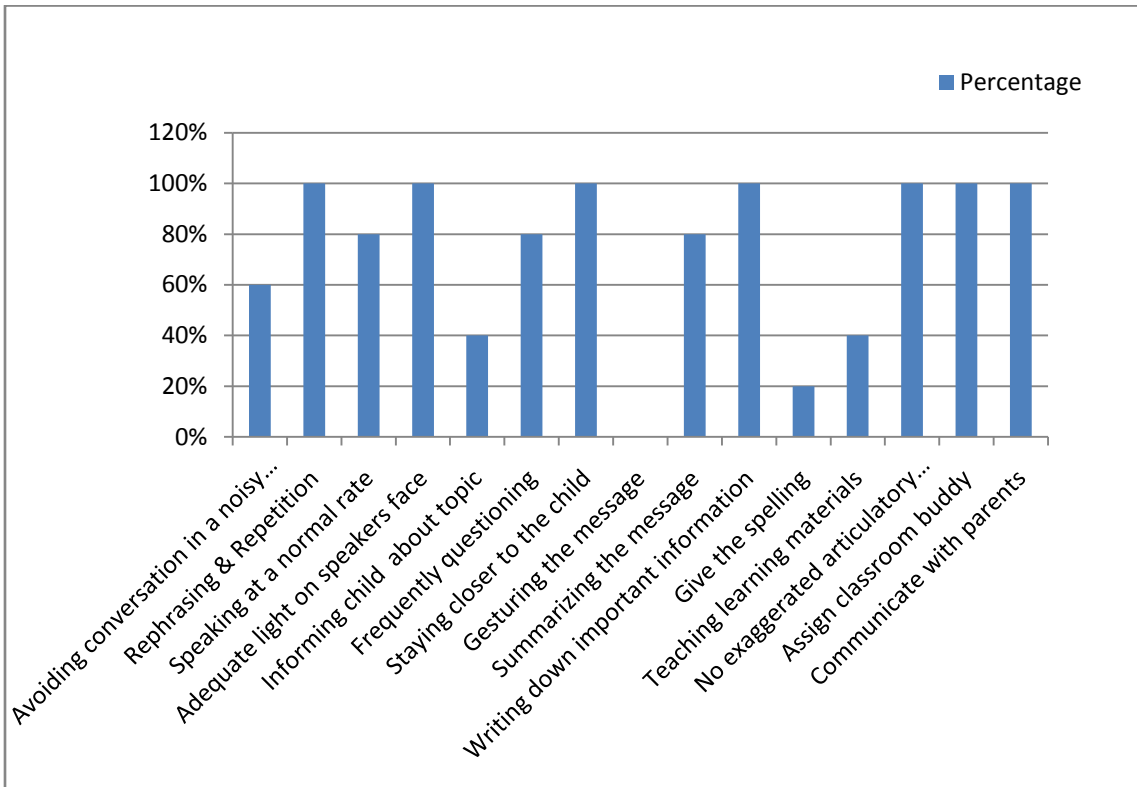
Accessibility of Audible voice in school 5 is 80%. Audible voice of teacher is essential for a child with hearing impairment to better accessibility. This aspect has to improve in classroom. The noise of classroom whether inside or outside were respectively 20%, 20%. The noise of classroom whether inside or outside directly influence the better accessibility for a children with hearing impairment. Both types of noises should be minimizing for better accessibility. The

noise outside the school was 0%.The noise outside the school was satisfactory regarding better accessibility. No Reverberation level was 80%.No Reverberation found in the school. Noise absorption was 0%. Noise absorption was very low, that should be more for better accessibility for children with hearing impairment. Lighting facility was 100%.Lighting facility was good in the classrooms. Glaring of light was 0%.Glaring of light was higher; it should be removing for better accessibility for lip reading, seeing the board properly. Seating arrangements were good according to degree & distance respectively 80%, 100%. Seating arrangements were good according to degree & distance. Last aspect of checklist i.e. use of audio visual adds was 0% ,that was abysmal condition and use of audio visual aids is very important for better understanding of any topic for children with hearing impairment.

**Table 4.10:** *Teacher behavior school 5*

QUESTION NO	T1	T2	T3	T4	T5	TOTAL	PERCENT AGE
1	1	0	0	1	1	3	60%
2	1	1	1	1	1	5	100%
3	1	0	1	1	1	4	80%
4	1	1	1	1	1	5	100%
5	0	0	0	1	1	2	40%
6	1	0	1	1	1	4	80%
7	1	1	1	1	1	5	100%
8	0	0	0	0	0	0	0%
9	1	0	1	1	1	4	80%

10	1	1	1	1	1	5	100%
11	0	0	1	0	0	1	20%
12	0	1	0	0	1	2	40%
13	1	1	1	1	1	5	100%
14	1	1	1	1	1	5	100%
15	1	1	1	1	1	5	100%



**Figure 4:10: Teacher behavior school 5**

The above figure (4.10) clearly depicts that the areas gesturing the message, writing down, teaching learning materials and exaggerated articulator movements have been rated the lowest (0%) by the teacher behavior of inclusive school. however they perceive the areas of rephrasing and repetition, adequate light on speakers face, writing down, staying closer, parents meeting & typical student supports has very good (100%)

## Discussion

The teachers were involved to conversation in noisy environment (60%). That was not appropriate for better hearing accessibility .Teachers were often used to rephrasing and repetition (100%) and it is important for better accessibility. Speaking rate was good (80%). The teachers were always used to stand in such a way that light could come on their face. Teachers were not emphasis on topic and vocabulary (40%). Teachers were continuously involved in ongoing evaluation (80%). Teachers were staying closure (100%) to the children with hearing impairment. The use of gesturing in teaching was absent (0%).Summarizing the message (80%) was good by the teachers. Writing down component (100%) has to improve according to children with hearing impairment. Pronunciation & repeating to spelling when the child misunderstanding the word was less (20%) that has to improve. Use of teaching learning material by teachers was abysmal (40%). Teachers were not doing the exaggerated articulator movement (100%). The use of classroom buddy was very good (100%). Parent meetings (100%) were regularly organized.

## Descriptive analysis

**Table 4.11:** *The Mean percentage of 5 schools.*

Case Summaries					
	School	N	Mean	Std. Deviation	Median
Physical percenta ge	1	5	53.8462	5.43928	53.8462
	2	5	58.4615	11.66596	61.5385
	3	5	61.5385	12.16261	61.5385

	4	5	46.1538	.00000	46.1538
	5	5	44.6154	10.02954	46.1538
	Total	25	52.9231	10.72335	53.8462
Teacher percenta ge	1	5	72.0000	15.20234	73.3333
	2	5	84.0000	3.65148	86.6667
	3	5	81.3333	16.59987	86.6667
	4	5	70.6667	8.94427	66.6667
	5	5	73.3333	12.47219	73.3333
	Total	25	76.2667	12.48406	80.0000

### Graph

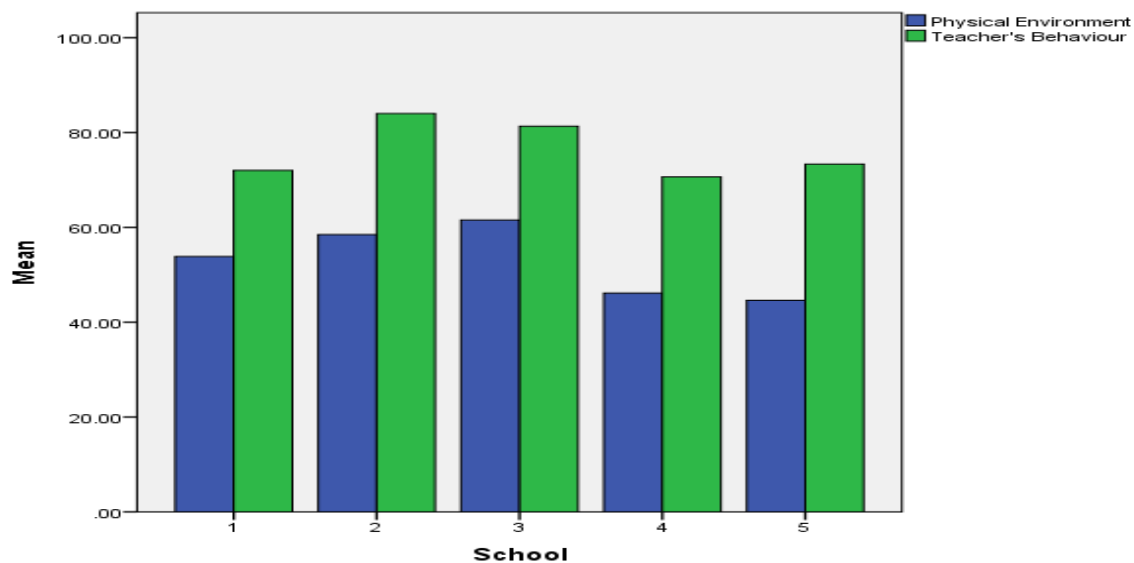


Figure 4:11: The mean percentage of 5 schools.

### Discussion:

Five inclusive schools were compared, in all five schools the accessibility for children with hearing impairment were not optimal in terms of physical environment and teacher's behavior.

The checklist pointed out strength and weakness from physical environment and teacher's behavior. On comparison of all five schools in terms of mean scores on physical environment that was the essential component for accessibility it was found no school had full accessibility according to checklist. School 3 had better in terms of physical environment than others schools. Even school 4 and school 5 have below than 50 mean score. For better accessibility purpose some previous researches also support this study .There was an obvious correlation between lighting and speech reading ability, the best situation is the use of overhead lights and natural lighting, which can supply sufficient light but not be so bright as to cause shadows or a glare. If lighting comes primarily from one wall, the teacher should arrange so the light comes from behind the child and falls on the teacher's face. This illuminates by the glare. The teacher should be careful not to stand near a window in bright sunlight because it often casts a shadow on the face. The teacher should also be aware of the effects of changes in lighting throughout the day and make appropriate adjustments (Brackett, 1990a).

Whenever possible, a circular class arrangement could be utilized that allows for better peer monitoring (Northern & Down, 2002).

Although there is usually little a teacher can do to change the construction of the room, controlling some of the adverse effects is possible. Hard surfaces, such as glass, wood floors, and blank boards reflected back and forth from each surface with a time differential. This will cause the student with a hearing impairment to pick up echoes of several different words at the same time (flexer, 1994).

Other comparison of all five schools in terms of mean scores on teacher behavior that was the essential component for accessibility it was found no school had optimal accessibility in terms of teachers' behavior according to checklist. School 2 had better in terms of teacher's behavior than others schools. But one thing was noticeable on mean scores that accessibility in terms of teachers' behavior was better than accessibility in terms of physical environment.

Earlier researchers also insisted that Inclusion requires that teachers, parents, and children be prepared for innovation (Peck, Hayden, Wandshneider, Peterson, & Richarz, 1989). These preparations include not only making environmental modification for purpose to ensure programs are physically accessible by children with disabilities, but also enhancing all participants' knowledge about children with special needs and appropriate instructional strategies, and developing positive attitudes towards inclusion (Dinnebeil, McInerney, Fox, & Juchartz-Pendry, 1998; Irwin et al., 2000).

### **Inferential Analysis**

<b>Test Statistics<sup>a,b</sup></b>		
	Physical Environment	Teachers Behavior
Chi-Square	9.317	6.933
df	4	4
Asymp. Sig.	.054	.139

a) Kruskal Wallis Test

b) Grouping Variable: School



Chi-square was done,  $Df=04$  and the table value at 0.05 is 9.317 in terms on physical environment, which showed that there no significant difference among all five inclusive schools for children with hearing impairment.

From the results discussed above, that the 'checklist has assessed the accessibility of 5 inclusive set ups/ schools. it could cleared bring out the strength areas and weak areas of inclusive set ups/ schools is an appropriate tool to find out the weak areas and also assist in creation better inclusive schools for children with hearing impairment .

## Chapter 5

### **Summary and conclusion**

The literature suggests that successful inclusive schools provide a unified educational system in which general and special climates work collaboratively to provide comprehensive and integrated services to all students. As with any innovation or educational reform effort, the successful inclusion of children with hearing impairment requires fundamental change in the physical environment of the schools and in the behavior of teachers. The inclusion of students with hearing impairment in the inclusive schools can be only possible when the accessibility factors are well taken care of.

### **Selection of subjects and the procedure of Research**

The present study was evaluative in nature to find answer whether the accessibility factors had any effect on the functioning of the students with hearing impairment in inclusive schools. The actual survey was studied to find out whether physical environment and teacher behavior affect the accessibility of students with students with hearing impairment in five inclusive schools.

The researcher first selected both areas of the accessibility for preparation of the checklist.

Above checklist was prepared and same had been validated by 5 experts in the institute (AIISH Mysore) and final checklist had been prepared. After obtaining the permission from concerned authorities, researcher visited physically at the permitted schools and implemented the validated checklist. Researcher administered the validated checklist to each school of five different periods and teachers, and collected the data by giving scores to administer the checklist. After Collection of data appropriate analysis was done.

### **Major findings of the study**

On compression of all five schools in terms physical environment it was found no school had optimal accessibility in terms physical environment. School 3 had better in terms of physical environment than others schools. Even school 4 and school 5 had minimal conducive physical environment to students with hearing impairment. All five schools were compared in terms of teacher behavior it was found no school had optimal accessibility. School 2 had better in terms of teacher's behavior than others schools. But one thing was noticeable that accessibility in terms of teachers' behavior was better than accessibility in terms of physical environmental in five schools. the accessibility for children with hearing impairment were not most favorable in terms of physical environment and teacher's behavior, as both were considered an essential part towards full participation and better education of children with hearing impairment.

Many students with hearing impairment are unable to access appropriate to the school and school programme because of physical environment and behavior of teachers. All those things define hearing impairment as a disability. If a child cannot hear a lesson because of any one or more reasons related to physical environment, they will not understand the content and

have no hope of learning. The teachers are at the same time not capable of modifying teaching methods, strategy and most important the behavior towards students with hearing impairment. Therefore, the class teacher is not able to communicate the children with hearing impairment at the same pace as the rest of class. As parents see the wear and tear with no hope of school and professional supports and then they look to the special school setting and travel kilometers to get these and sadly for many students with hearing impairment the journey to low education attainment with the view of leaving schools becomes palpable.

### **Limitations of the study**

- The study was limited to few schools and few teachers.
- The study was limited to primary schools.
- This study was not included administrators of the schools and parents of the children with hearing impairment.

### **Recommendations of the study**

- The study can be done on private inclusive schools.
- The study can be done on children with other disability.
- The study can be done as comparison with government inclusive schools and private inclusive schools.

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## Appendix I

To,

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Sub:- Request for validation of questionnaire for survey of accessibility to students with hearing impairment in inclusive educational set-ups,-reg.

Sir/Madam,

I, Madhushri D. C, am currently pursuing M.S.ED. (HI) course at the all India Institute of speech & Hearing, Mysore. As part of the course requirements, I am carrying out a dissertation research titled “Survey of Accessibility to Students with Hearing Impairment in Inclusive Educational Set-ups.” Under the guidance of Dr.Alok Kumar Upadhyay. For the purpose of the research we have developed a questionnaire to survey the accessibility to students with hearing impairment in inclusive educational set-ups, which has been enclosed herewith. Kindly pursue the same and provide your valuable feedback on the adequacy of content and layout of the questionnaire in the form enclosed for the purpose.

Thanking you and with regards,

Yours sincerely,

(Ms.madhushri .D.C)

M.S.ED (HI) 2014-15

AIISH

Place:

Date:

## Appendix II

### Checklist for Accessibility to Students with Hearing Impairment in Inclusive Educational Set-ups.

Sl. No.	Details of Test Items	Yes / No		Any other remarks & suggestions for improvisation
<b>PART A: PHYSICAL ENVIRONMENT CHECKLIST</b>				
1	Is the teacher's voice audible in the class room?			
2	Is noise free environment available in the class rooms?			
3	Is there noise free environment outside the classrooms?			
4	Is the environments noise free outside the school?			
5	Do class rooms have reflection of sound?			
6	Using carpet, flour pots thermocol boards for noise absorption.			
7	Are classrooms well lighted?			
8	Do classrooms offer sufficient even lighting?			
9	Do classroom lighting have shadows?			
10	Is there refaction of light in the classroom lighting? (by which students cannot see properly)			
11	Is child with Hearing Impairment seated within 45 degree in front of the teacher?			
12	Is the child seated within 6 to 10 feet in front of the teacher?			
13	Do the class rooms have audio visual technology?			



**PART B: CHECKLIST OF TEACHER BEHAVIOR**

1	Avoiding conversation in a noisy environment.			
2	Rephrasing and repetition of spoken message.			
3	Speaking at a normal rate.			
4	Communicating in a well illuminated environment with adequate light on speakers face.			
5	Informing child ahead about topic and vocabulary.			
6	Frequently questioning to check if the child is following.			
7	Staying closer to the child.			
8	If the child has difficulty in following classroom instruction was total communicational aspects like gestures used			
9	Summarizing the message.			
10	Writing down important information and key points.			
11	If the child did not understand key vocabulary did the teacher try to clarify by providing the spelling.			
12	Teachers are used appropriate teaching learning materials.			
13	Teachers are using exaggerated articulatory movements.			
14	Teacher's often assign classroom buddy.			
15	Teacher communicate with parents keep them informed about the progress / difficulties faced by child.			

**Date:**

**Name & Signature of Teacher**

### Appendix III

From

Ms.Madhushri D.C  
M.S.Ed (HI) Student  
Department of Special Education  
All India Institute of Speech & Hearing  
Manasagangothri  
Mysore-06  
E-mail:- jagadish942@yahoo.com

To

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Sub: - Request to validate the questionnaire - reg.

Respected Sir/Madam,

I, Ms. Madhushri D C, am a student of M.S.Ed (HI) course at All India Institute of Speech & Hearing, Mysore. As a part of my course requirements, I have undertaken a dissertation research titled “Survey of Accessibility to Students with Hearing Impairment in Inclusive Educational Set-ups.” under the guidance of Dr. Alok Kumar Upadhyay, Reader, Department of Special Education, All India Institute of Speech & Hearing, Mysore.

The study has been undertaken with the following objectives:

- Development and or adaptation of tool for carrying out accessibility of primary school of inclusive educational setups.
- Conducting access audit in the selected schools.
- Compilation of report on the accessibility nature of the selected schools.
- Suggestion for improving barrier free learning environment in the selected schools.

Therefore, I request you to critically evaluate checklist developed for surveying accessibility of primary schools of inclusive educational setups and provide your valuable feedback regarding appropriates of the items and suggestions for implementation.

Your’s sincerely

Guide Signature:

(Ms.Madhushri.D.C)