Appendix –A

List of Assistive Technology for Hearing Impaired Students

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Assistive Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Hearing Technology</td>
</tr>
<tr>
<td>1.1</td>
<td>Assistive Listening Device (ALD)</td>
</tr>
<tr>
<td>1.1.1</td>
<td>Frequency Modulated System</td>
</tr>
<tr>
<td>1.1.2</td>
<td>Infrared System</td>
</tr>
<tr>
<td>1.1.3</td>
<td>Induction Loop</td>
</tr>
<tr>
<td>1.1.4</td>
<td>Audio Loops</td>
</tr>
<tr>
<td>1.2</td>
<td>Personal Amplification</td>
</tr>
<tr>
<td>1.2.1</td>
<td>Behind-The-Ear Hearing Aid</td>
</tr>
<tr>
<td>1.2.2</td>
<td>In-The-Ear-Hearing Aid</td>
</tr>
<tr>
<td>1.2.3</td>
<td>In-The-Canal Hearing Aid</td>
</tr>
<tr>
<td>1.2.4</td>
<td>Completely In-The Canals Hearing Aid</td>
</tr>
<tr>
<td>1.2.5</td>
<td>Body Worn Hearing Aid</td>
</tr>
<tr>
<td>1.2.6</td>
<td>Bracelet type of Hearing Aid</td>
</tr>
<tr>
<td>1.2.7</td>
<td>Watch- What-You-Say-Revolutionary Visual Hearing Aid</td>
</tr>
<tr>
<td>2.</td>
<td>Alerting Devices</td>
</tr>
<tr>
<td>2.1</td>
<td>Door Bell with Amplified Sound</td>
</tr>
<tr>
<td>2.2</td>
<td>Smoke Alerting Devices</td>
</tr>
<tr>
<td>2.3</td>
<td>Lights Alerting Devices</td>
</tr>
<tr>
<td>3.</td>
<td>Communication Supports</td>
</tr>
<tr>
<td>3.1</td>
<td>Telecommunication Devices for Deaf</td>
</tr>
<tr>
<td>3.1.1</td>
<td>Cell Phone</td>
</tr>
<tr>
<td>3.1.2</td>
<td>Captioned Telephone</td>
</tr>
<tr>
<td>3.1.3</td>
<td>Video Phone</td>
</tr>
<tr>
<td>3.1.4</td>
<td>Subtitle Visual Screen</td>
</tr>
<tr>
<td>3.2</td>
<td>Person to Person devices</td>
</tr>
<tr>
<td>3.2.1</td>
<td>Ubi-Due Face to Face Communicator</td>
</tr>
<tr>
<td>3.3</td>
<td>Assistive Devices to use for Group Activities</td>
</tr>
<tr>
<td>3.3.1</td>
<td>Note taking Devices</td>
</tr>
<tr>
<td>3.3.1.1</td>
<td>Computer Assisted Note Taking</td>
</tr>
<tr>
<td>3.3.1.2</td>
<td>Handwriting Recognition Devices</td>
</tr>
<tr>
<td>3.3.1.2.1</td>
<td>Digital Pen</td>
</tr>
<tr>
<td>3.3.1.2.2</td>
<td>Interactive Whiteboards</td>
</tr>
<tr>
<td></td>
<td><em>Any other Note taking Devices Specify</em></td>
</tr>
<tr>
<td>3.4</td>
<td><strong>Voice to Text / Sign Software</strong></td>
</tr>
<tr>
<td>3.4.1</td>
<td>Caption Mic TM</td>
</tr>
<tr>
<td>3.4.2</td>
<td>iCommunicator</td>
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<tr>
<td>3.4.3</td>
<td>Video Remote Interpreter</td>
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<tr>
<td>3.5</td>
<td><strong>Real Time Captioning</strong></td>
</tr>
<tr>
<td>3.5.1</td>
<td>Communication Access Real Time Captioning (CART)</td>
</tr>
<tr>
<td>3.5.2</td>
<td>C Print</td>
</tr>
<tr>
<td>3.5.3</td>
<td>Remote Captioning</td>
</tr>
</tbody>
</table>
APENDIX-B

Check list of Availability of Assistive Technology and Rating Scale for Usage of Assistive Technology

Introduction

The present scale consists of items aimed to identify the Availability and Usage of Assistive Technology in Schools for Hearing Impaired. Please read the items and put a tick mark on any one of the options namely yes or no. If the assistive technology listed is available, you have to put a tick (√) mark on any one of the four options indicating the frequency of using the assistive technology. In the column suggest whether the assistive technology is an essential requirement if so mark (√) ‘E’ (Essential), if desirable but not very essential mark (√) ‘D’ (Desirable) against the assistive technology listed. Please respond to all the items; Your active cooperation is highly solicited.

The information provided by you will be used only for research purpose and will be kept for confidential.

Please give the following information:-

Name---------------------------------------------------------------

Qualification--------------------------------------------------------------

School Name --------------------------------------------------------------

Class-----------------------------------------------------------------------------

Gender ---------------------------------------------------------------

Type of Schools---------------------------------------------------------------

Experience of Teaching-------------------------------------------------------------

Area: Urban/Rural/Semi urban---------------------------------------------
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Assistive Technology</th>
<th>Available</th>
<th>If available frequency of usage</th>
<th>Requirement</th>
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<tr>
<td>1.</td>
<td>Hearing Technology</td>
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<td>Frequency Modulated System</td>
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<td>1.1.2</td>
<td>Infrared System</td>
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<td>1.1.3</td>
<td>Induction Loop</td>
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<tr>
<td>1.1.4</td>
<td>Audio Loops</td>
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<td>Any other Specify</td>
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<td>1.2</td>
<td>Personal Amplification</td>
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<tr>
<td>1.2.1</td>
<td>Behind-The-Ear Hearing Aid</td>
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<tr>
<td>1.2.2</td>
<td>In-The-Ear-Hearing Aid</td>
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<td>1.2.3</td>
<td>In-The-Canal Hearing Aid</td>
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<td>1.2.4</td>
<td>Completely In-The Canal Hearing Aid</td>
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<tr>
<td>1.2.5</td>
<td>Body Worn Hearing Aid</td>
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<td>1.2.6</td>
<td>Bracelet type of Hearing Aid</td>
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<td>1.2.7</td>
<td>Watch- What-You-Say-Revolutionary Visual Hearing Aid</td>
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<tr>
<td>Any other Personal Amplification Specify</td>
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</table>

2 Alerting Devices

<table>
<thead>
<tr>
<th>2.1 Door Bell with Amplified Sound</th>
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</thead>
<tbody>
<tr>
<td>2.2 Smoke Alerting Devices</td>
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<tr>
<td>2.3 Lights Alerting Devices</td>
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<tr>
<td>2.4 Any other Alerting Devices Specify</td>
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<td>2.5</td>
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<tr>
<td>2.6</td>
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<tr>
<td>2.7</td>
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</tbody>
</table>

3 Communication Supports

<table>
<thead>
<tr>
<th>3.1 Telecommunication</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1.1 Cell Phone</td>
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<tr>
<td>3.1.2 Captioned Telephone</td>
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<tr>
<td>3.1.3 Video Phone</td>
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<td>3.1.4 Subtitle Visual Screen</td>
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<td>Section</td>
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<td>3.3.1.4</td>
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<td>3.3.1.5</td>
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<tr>
<td><strong>3.4</strong> Voice to Text / Sign Software</td>
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<tr>
<td>3.4.1 Caption Mic TM</td>
</tr>
<tr>
<td>3.4.2 iCommunicator</td>
</tr>
<tr>
<td>3.4.3 Video Remote Interpreter</td>
</tr>
<tr>
<td><em>Any other Voice to Text / Sign Software Specify</em></td>
</tr>
<tr>
<td>3.4.4</td>
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<tr>
<td>3.4.5</td>
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<tr>
<td>3.4.6</td>
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<tr>
<td><strong>3.5</strong> Real Time Captioning</td>
</tr>
<tr>
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<tr>
<td>3.5.2 C Print</td>
</tr>
<tr>
<td>3.5.3 Remote Captioning</td>
</tr>
<tr>
<td><em>Any other Real Time Captioning Specify</em></td>
</tr>
<tr>
<td>3.5.4</td>
</tr>
<tr>
<td>3.5.5</td>
</tr>
<tr>
<td>3.5.6</td>
</tr>
</tbody>
</table>

6. Do you face problems in using any of the Assistive Technology
   
   Yes/No
   
   If yes,
   
   - Specify the device and the problems faced

   - Suggest measures/facilities required to overcome the problems faced.

7. Have you undergone training in use of Assistive Technology?
   
   Yes/No
   
   If yes,
   
   - Mention the training programme

   - Duration of the training

   - Which agencies had organized the training?

8. Do you feel need of training to use Assistive Technology?
   
   Yes/No
   
   If yes,
   
   Mention that training needed?

9. Does Assistive Technologies increase student performance
   
   Yes/No
If yes,

Explain how-------------------------------------------------------------------------------------------------------------------
-------------------------------------------------------------------------------------------------------------------
-------------------------------------------------------------------------------------------------------------------

10. Do you think Assistive Technology available in your school at present is appropriate?  Yes/No

11. List out Assistive Technology which are not presently available in your institution, which you feel required to add?

-------------------------------------------------------------------------------------------------------------------
-------------------------------------------------------------------------------------------------------------------
-------------------------------------------------------------------------------------------------------------------

12. If you do not have any Assistive Technology, the reason for non–acquisition is (Please ✓)

   a. Not affordable ✓
   b. Not aware ✓
   c. Not Interested ✓
   d. Not compatible with hearing aid ✓
   e. Not feasible to use in classroom ✓

13. Do you get repair/ maintenance service, when your device goes out of order. (Please ✓)

   a. Immediately ✓
   b. Takes long time ✓
   c. Not at all ✓
APENDIX-C

Test for Teacher’s Awareness of Assistive Technology

Instructions

The present test consists of a list of assistive devices and programmes that could be used for the benefit of hearing impaired students. The devices are related to Hearing technology, Alerting devices and Communication supports. There are certain devices and programmes listed below, that could be used by hearing impaired students in the classroom.

The information provided by you will be used only for research purpose and will be kept for confidential.

Please read the following items and fill in the necessary information. Your active cooperation is highly appreciated.

Name-----------------------------------------------------------------------------------------------
Qualification-----------------------------------------------------------------------------------------------
School Name -----------------------------------------------------------------------------------------------
Class-----------------------------------------------------------------------------------------------
Gender-----------------------------------------------------------------------------------------------
Type of Schools-----------------------------------------------------------------------------------------------
Experience of Teaching-----------------------------------------------------------------------------------------------
Area: Urban/Rural/Semi urban-----------------------------------------------------------------------------------------------
1. HEARING TECHNOLOGY

1.1. Assistive Listening Device (ALD)

1.1.1 Frequency-Modulated (FM) Amplification Systems: Are you aware of it? Yes/No

If yes,

♦ Why is it used?  

♦ How is it used?

♦ How does it help hearing impaired children?

♦ List its Advantages

♦ What are its limitations?

♦ What are the problems faced by you and children while using it in the classroom?

1.1.2 Infrared Systems: Are you aware of it? Yes/No

If yes,

♦ Why is it used?
1.1.3 **Induction loop**: Are you aware of it? 

Yes/No

If yes,

- Why is it used? ------------------------------------------

- How is it used?------------------------------------------

- How does it help hearing impaired children?-------------

- List its Advantages-------------------------------------
1.1.4 Audio Loops: Are you aware of it? Yes/No

If yes,

- Why is it used? 
- How is it used? 
- How does it help hearing impaired children? 
- List its Advantages 
- What are its limitations? 
- What are the problems faced by you and children while using it in the classroom?
1.2 Personal Amplification

1.2.1 Behind -The- Ear Hearing Aid: Are you aware of it?
Yes/No

If yes,

♦ Why is it used? -----------------------------------------------
---------------------------------------------------------------------
---------------------------------------------------------------------
---------------------------------------------------------------------

♦ How is it used? -----------------------------------------------
---------------------------------------------------------------------
---------------------------------------------------------------------
---------------------------------------------------------------------

♦ How does it help hearing impaired children? -------------------------------
---------------------------------------------------------------------
---------------------------------------------------------------------
---------------------------------------------------------------------

♦ List its Advantages-----------------------------------------------
---------------------------------------------------------------------
---------------------------------------------------------------------
---------------------------------------------------------------------

♦ What are its limitations? -----------------------------------------------
---------------------------------------------------------------------
---------------------------------------------------------------------
---------------------------------------------------------------------

♦ What are the problems faced by you and children while using it in the classroom?
---------------------------------------------------------------------
---------------------------------------------------------------------
---------------------------------------------------------------------

1.2.2 In- The- Ear Hearing Aid: Are you aware of it? Yes/No

If yes,

♦ Why is it used? -----------------------------------------------
---------------------------------------------------------------------
---------------------------------------------------------------------
---------------------------------------------------------------------
1.2.3 In-The-Canal Hearing Aid: Are you aware of it? Yes/No

If yes,

♦ Why is it used? -----------------------------------------------
-----------------------------------------------
-----------------------------------------------
-----------------------------------------------

♦ How is it used?-----------------------------------------------
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-----------------------------------------------
-----------------------------------------------

♦ How does it help hearing impaired children?----------------------
-----------------------------------------------
-----------------------------------------------
-----------------------------------------------

♦ List its Advantages-----------------------------------------------
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-----------------------------------------------
-----------------------------------------------
What are its limitations? -------------------------------------------------------------
-----------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------

What are the problems faced by you and children while using it in the classroom?
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-----------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------

1.2.4 Completely- In –The-Canal Hearing Aid: Are you aware of it? Yes/No
If yes,

♦  Why is it used? -----------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------

♦  How is it used?Adamr------------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------

♦  How does it help hearing impaired children?-----------------------------------------------
-----------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------

♦  List its Advantages-------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------

♦  What are its limitations? -----------------------------------------------------------------
-----------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------

♦  What are the problems faced by you and children while using it in the classroom?
-----------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------
1.2.5 Body Worn Hearing Aid: Are you aware of it? Yes/No

If yes,

♦ Why is it used? -----------------------------------------------

♦ How is it used?-----------------------------------------------

♦ How does it help hearing impaired children?----------------------

♦ List its Advantages---------------------------------------------

♦ What are its limitations?---------------------------------------

♦ What are the problems faced by you and children while using it in the classroom?

1.2.6 Bracelet Type of Hearing Aid: Are you aware of it? Yes/No

If yes,

♦ Why is it used? -----------------------------------------------

♦ How is it used?-----------------------------------------------
1.2.7 Watch-What-You-Say-Revolutionary Visual Hearing Aid: Are you aware of it?

Yes/No

If yes,

- Why is it used?

- How is it used?

- How does it help hearing impaired children?

- List its Advantages

- What are its limitations?
2. ALERTING DEVICE

2.1 Alarm clock: Are you aware of it? Yes/No

If yes,

- Why is it used?
- How is it used?
- How does it help hearing impaired children?
- List its Advantages
- What are its limitations?
- What are the problems faced by you and children while using it in the classroom?
2.2 Door Bell: Are you aware of it?  Yes/No

If yes,

- Why is it used? 
- How is it used?
- How does it help hearing impaired children?
- List its Advantages
- What are its limitations?
- What are the problems faced by you and children while using it in the classroom?

2.3 Smoke Alerting Devices: Are you aware of it?  Yes/No

If yes,

- Why is it used?
- How is it used?
2.4 Lights Alerting Devices: Are you aware of it? Yes/No

If yes,

- Why is it used? 
- How is it used?
- How does it help hearing impaired children?
- List its Advantages
- What are its limitations?
What are the problems faced by you and children while using it in the classroom?

2.5 Vibration Alerting Devices: Are you aware of it? Yes/No
If yes,
- Why is it used?
- How is it used?
- How does it help hearing impaired children?
- List its Advantages
- What are its limitations?
- What are the problems faced by you and children while using it in the classroom?

3. COMMUNICATION SUPPORTS

3.1 Telecommunication

3.1.1 Cell Phone: Are you aware of it? Yes/No
If yes,
3.1.2 Captioned Telephone: Are you aware of it?
Yes/No

If yes,

- Why is it used? 
- How is it used?
- How does it help hearing impaired children?
- List its Advantages
- What are its limitations?
- What are the problems faced by you and children while using it in the classroom?
3.1.3 Video Phone: Are you aware of it? Yes/No

If yes,

- Why is it used?  
- How is it used?
- How does it help hearing impaired children?
- List its Advantages
- What are its limitations?
- What are the problems faced by you and children while using it in the classroom?
3.1.4. **Subtitle:** Are you aware of it? Yes/No

If yes,

- Why is it used?
- How is it used?
- How does it help hearing impaired children?
- List its Advantages
- What are its limitations?
- What are the problems faced by you and children while using it in the classroom?

---

3.2 **Person to Person Communication Devices**

3. 2.1 **Ubi-Due Face to Face Communicator:** Are you aware of it? Yes/No

If yes,

- Why is it used?
3.3 Assistive Devices use for Group Activities

3.3.1 Note Taking Devices

3.3.1.1 Computer Assisted Note Taking: Are you aware of it? Yes/No

If yes,

✦ Why is it used? ----------------------------------------------------------------------
  ---------------------------------------------------------------------
  ---------------------------------------------------------------------

✦ How is it used?---------------------------------------------------------------------
  ---------------------------------------------------------------------
  ---------------------------------------------------------------------

✦ How does it help hearing impaired children?------------------------------------
  ---------------------------------------------------------------------
  ---------------------------------------------------------------------
3.3.1.2 Handwriting Recognition Devices

3.3.1.2.1 Digital Pen: Are you aware of it? Yes/No

If yes,

♦ Why is it used? -

♦ How is it used? -

♦ How does it help hearing impaired children? -

♦ List its Advantages -

♦ What are its limitations? -

♦ What are the problems faced by you and children while using it in the classroom?
3.3.1.2.1 Interactive Whiteboards: Are you aware of it? Yes/No

If yes,

♦ Why is it used? -----------------------------------------------
♦ How is it used?-----------------------------------------------
♦ How does it help hearing impaired children?---------------------
♦ List its Advantages--------------------------------------------
♦ What are its limitations?-------------------------------------
♦ What are the problems faced by you and children while using it in the classroom?

3.4 Voice to Text / Sign Software

3.4.1 Caption Mic TM: Are you aware of it? Yes/No

If yes,

♦ Why is it used? -----------------------------------------------
3.4.2 i Communicator: Are you aware of it? Yes/No

If yes,

- Why is it used? -
- How is it used? -
- How does it help hearing impaired children? -
3.4.3 **Video Remote Interpreter:** Are you aware of it?

Yes/No

If yes,

- **Why is it used?**
- **How is it used?**
- **How does it help hearing impaired children?**
- **List its Advantages**
- **What are its limitations?**
- **What are the problems faced by you and children while using it in the classroom?**
3.5. Real Time captioning

3.5.1 Communication Access Real Time Captioning (CART): Are you aware of it?

Yes/No

If yes,

♦ Why is it used?  

♦ How is it used?

♦ How does it help hearing impaired children?

♦ List its Advantages

♦ What are its limitations?

♦ What are the problems faced by you and children while using it in the classroom?

3.5.2 C Print: Are you aware of it?

Yes/No

If yes,

♦ Why is it used?
5.3 Remote Captioning: Are you aware of it?  
Yes/No

If yes,

♦ Why is it used?  ------------------------------------------

------------------------------------------

♦ How is it used?------------------------------------------

------------------------------------------

♦ How does it help hearing impaired children?------------

------------------------------------------

♦ List its Advantages

♦ What are its limitations?

♦ What are the problems faced by you and children while using it in the classroom?
APPENDIX-D
PHOTOS

Schools for hearing impaired which formed a part of the sample

Schools for hearing impaired which formed a part of the sample

Teachers of hearing impaired school filling in the tools
Hearing impaired students communicating through sign language

Hearing impaired student being taught word pronunciation

Teacher of hearing impaired students adjusting Frequency Modulated System before beginning the class.
Frequency Modulated System being adopted as an assistive technology device in the classroom.

Teaching production of various sound to hearing impaired students.

Availability of Assistive Technology devices in an hearing impaired school.
Sample marks of register of hearing impaired students considered in the study for academic achievement.

Classroom for hearing impaired which shows the seating arrangements such that individual attention could be paid
Teachers answering taking the test for Teachers Awareness of Assistive technology

Parent-teachers meeting being conducted at All India Institute of Speech and Hearing.