

Group listening technology

Vivien Ogg discusses the advantages of the Group Hearing Aid system in use at Mary Hare School



As Teachers of the Deaf we know how listening in the classroom is the key to accessing the curriculum and to successful inclusion. For most Teachers of the Deaf this means fitting and managing the use of a radio aid system for a single pupil within a mainstream classroom. At Mary Hare school, as a specialist school for the deaf with an Auditory Oral philosophy, we put great importance on the use of residual hearing in developing language and learning. All pupils need to have the technology not only to hear the teacher but also to be able to hear themselves and their peers. To achieve this aim, we use group listening technology designed, built and developed at Mary Hare.

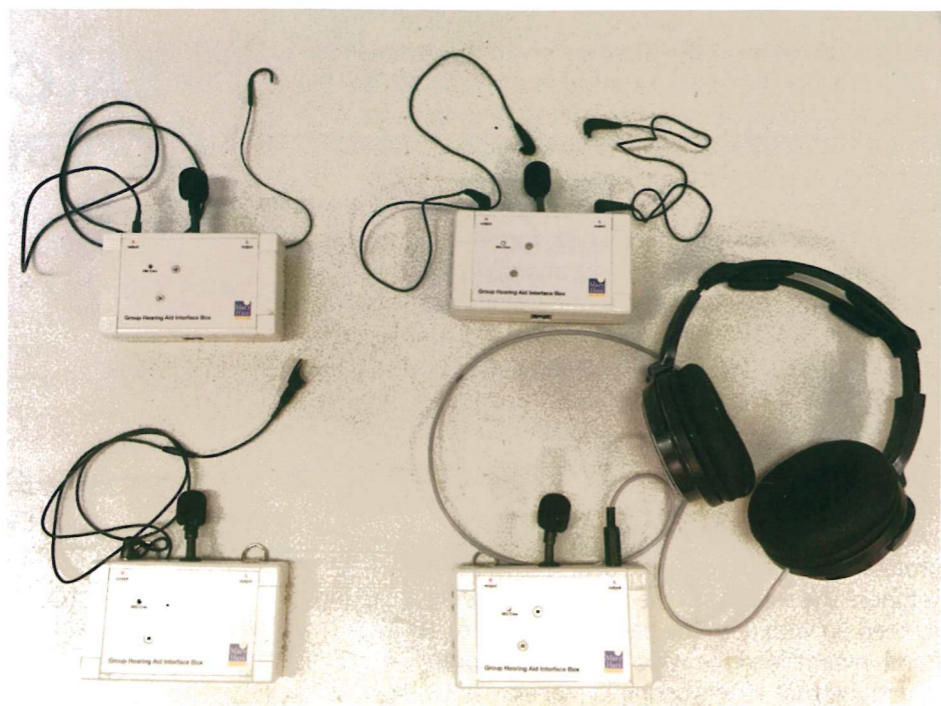
Our unique Group Hearing Aid (GHA) system is fitted within every classroom. It consists of three main parts. Firstly, the teacher's unit and microphones which are at the front of the classroom located on the teacher's desk. Secondly, the horseshoe arrangement of desks which house the units for pupils to plug into the system. Finally, the pupils have their own personal interface boxes.

Who is the system for?

- Pupils with one or two hearing aids

- Pupils with cochlear implants
- Pupils with both an implant and hearing aid
- Pupils with bone conduction aids.

To use the GHA system, all pupils, whatever their type of amplification, connect using their personal interface box. Pupils connect by using direct-input leads or other connection methods eg lightweight headphones, induction loop or Bluetooth devices.



The Pupil Interface Box

The microphone sits on the top of the box between two jack sockets which are the outputs for left and right. On each side of the box are two buttons, which allow the pupils to adjust the volume up and down, within set parameters. On the front of the box is a red LED which flashes when the child speaks, indicating that the microphone is working. The box has an adjustable neck strap (available in school house colours) and a belt clip on the back so that it can be attached to the tie or shirt; the belt clip position is adjustable.

An overview

How is the system fitted?

To set up the system every pupil undergoes speech testing using audition alone. This enables the Audiology team to establish the suitability and individual requirements for each pupil. Every pupil will then be given his/her own interface box which is lightweight and is worn around the neck to facilitate the close-coupled microphone situated on the top of each box. There are two standard audio jack sockets for left and right output, and the pupils connect their hearing aids or processors to these sockets using standard 'Direct Input' cables. In this respect, the GHA is connected in an identical fashion to any other form of audio input (iPod, MP3 player etc.). If the direct input facility is not available on their personal amplification, then alternative connections are used.

In some classrooms, the GHA is augmented by a Sound Field System. This is another form of classroom amplification that enables pupils to still hear their teacher clearly when they move to different areas of the classroom eg when they are conducting laboratory experiments.

The benefits

It is well documented that a hearing-impaired child will be disadvantaged if his/her classroom environment has a signal-to-noise ratio of less than +15dB. The Mary Hare GHA system enables pupils to hear their teacher clearly wherever they are seated in the classroom with an excellent signal-to-noise ratio of +40dB.

As well as hearing the teacher clearly, all pupils hear the contributions and responses of all other class members. This provides a natural group learning experience identical to that of their hearing peers in the mainstream classroom. An automatic level control for the microphone ensures that everyone's voice is heard at the same, comfortable level.

When pupils are first fitted with their personal interface box they comment on how good it is to hear their own voice. They do not feel different as everyone has the same technology. They hear consistently in every lesson and feel more independent as they are not reliant on others to



repeat or relay what is being said. Instead of struggling to hear and learn they can just concentrate on learning.

The disadvantages

As with all technology, the systems are only helpful if they are consistently used and working. As Teachers of the Deaf we have a responsibility to ensure that systems are consistently checked and reviewed to make sure that they meet the standards required. This needs a management protocol to maintain systems and a constant dialogue between pupils, staff and Audiology team to keep informed and resolve any issues. This is important when pupils receive upgrades of hearing aids and processors as we need to review the type of connections eg Bluetooth.

We hope that, with the introduction of integrated Bluetooth in the latest hearing aids and processors, in the future we will be able to develop a completely wireless group aid system.

Conclusion

The Mary Hare GHA facilitates listening for learning in our specialist school setting. We are aware that it is unique and that it makes listening very easy for pupils whilst they are at school. It reduces the anxieties of trying to listen in noisy environments. However, pupils need to be prepared for the noisy world of home, work and further education. Our transition programme gives students the opportunity to explore and trial the ever-developing range of alternative technology to support their needs. This ensures that they continue to enhance their listening experiences beyond Mary Hare and into their adult life.



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