# Chapter 8 Activities

Web activity WA8.1

Development of hearing aids

Hearing aids have gone through various stages of development, from the use of ear trumpets for the partially deaf that dates back to the seventeenth century and became increasingly common through the eighteenth (Levitt, 2007)[[1]](#footnote-1). These trumpets directed sounds into the ear and blocked all other noises. Commercial production was established by Frederick C. Rein in London in 1800. Collapsible conical ear trumpets were made by instrument makers for individual clients. The invention of the telephone and the microphone instigated the movement towards modern hearing aids in the 1870s and 1880s. The technology within the telephone increased how sound signals could be altered. The first electric hearing aid was created in 1898. By the late twentieth century, technological and digital developments generally had facilitated the digital hearing aid.

Web activity WA8.2

Responsiveness of classroom context

Read the following text.

How do you think these suggestions might be introduced to new teachers or learning/classroom assistants new to including learners with hearing impairments in their classrooms?

Blairmires et al. (2016) suggest that, if young people with hearing impairments are to participate in settings and classrooms, teachers and others should:

* stand still, face the learner and speak clearly in complete sentences without covering the face;
* ensure that classroom/learning assistants do not obstruct the views of learners with hearing impairments;
* ensure that the light falls on the speaker’s face to enable communication through lip-reading and/or body language where appropriate;
* seating the learner in a place where s/he can best follow the lessons, for example away from extraneous noise at the front of the class and slightly to one side so that s/he can watch other learners’ responses, or arrange circular seating in classrooms;
* use visual aids, and write new vocabulary and important points on the whiteboard or other visual display;
* during group discussion, indicate who is speaking, ensure only one learner speaks at a time, and repeating peers’ questions and answers;
* create the opportunity to mix with a hearing-impaired peer group where possible, to avoid a sense of isolation.

Web activity WA8.3

Skills needed to travel within an environment

Think about the skills you would need to travel from one place to another within a given environment, without using sight. What are the most important of these?

The RNIB (2020) has produced a very useful publication ‘Mobility and independence: School Age’ that is accessible at <https://www.rnib.org.uk/health-social-and-education-professionals/education-professionals/teaching-and-learning-guidance> (accessed 02.04.2020). You might choose to access this document for some very useful information and advice about the mobility needs of young people with visual impairments.

Travel within the environment require two interdependent abilities, that are equally important: mobility that is about physically moving from one place to another, and orientation, is about creating a mental map of where one is in relation to surroundings.

Mobility is a key issue for all people with vision impairment. It is simply the ability to move about safely within the environment. The amount of independence that a young person can achieve is closely related to how independently mobile they are. It is possible to learn skills that will increase mobility within a person’s immediate surroundings and for wider travel.

Orientation is an awareness of space and an understanding of the situation of the body within it – the process of using all the body’s senses to establish one’s position and relationship to all other significant objects in the environment. The long cane is the most commonly recognised mobility aid along with the guide dog. However, being mobile is of little value if individuals cannot orientate themselves within the environment – they must know where they are and how to find their way around. An initial orientation may well assist movement around the learning spaces. A skilled sighted guide can convey a great deal of information, non-verbally, to a person with a vision impairment, who holds the arm of the guide usually just above the elbow or, for young children, the wrist, and walks at approximately half to one pace behind the guide (RNIB, 2020).

Web activity WA8.4

Carrying out an environmental audit

Walk around a setting, school or college to which you have access, or imagine walking around it. As you do so note down any areas where you consider changes should be made to make the environment more accessible for a learner with visual impairment. You might choose to ask yourself the following questions, for example – and, of course, there will be more, depending on your institution:

* Are signs around the building well positioned and easily visible? Do they incorporate braille or symbol?
* Are steps, edges, pillars and other transition points highlighted with yellow paint.
* Have handrails been fixed at important points to enable mobility?
* Have textured materials been fixed at hand height to indicate the route to particular significant locations such as the toilets?
* Have different floor coverings been laid down to indicate different areas of the building?
* Are there designated quiet and active areas in playgrounds and open leisure areas, and shaded areas for learners with light sensitivity?
* Are the grounds, corridors, cloakrooms and classrooms maintained well and free of obstructions?
* Are resources in classrooms stored properly and clearly labelled with tactile markers, if necessary?
* Is there good lighting in the classrooms with blinds on windows to reduce glare?
* Is there adequate space in classrooms for learners who use special equipment to work?

Web activity WA8.5

Understanding the production of braille

Just as printed materials can be produced with paper, pencil, typewriter or printer, braille can also be written in several ways. For writing braille, an individual may use a slate and stylus or a braillewriter. In addition, there are numerous electronic devices and computer-based software that can be used to produce braille. For a blind learner, a slate and stylus is the equivalent of a pencil and paper for a sighted person. The slate is a pair of metal sheets hinged together with holes to serve as guides for punching in Braille with a stylus. To use a slate and stylus, the user places a piece of paper over the lower sheet, closes the upper sheet and presses it into place. The paper is thus fixed between the two sheets of metal and using the guides, the tip of the stylus is pressed down through the small rectangular hole to make braille dots or cells. It is necessary to punch in the Braille backwards using this method, as the holes are punched in on the back of the paper, the page is turned over and the Braille is then read.

Embossed Braille is more usually produced using a Perkins Brailler. Unlike a typewriter which has more than 50 keys, the Perkins Brailler has only six keys and a space bar. These keys are numbered to correspond with the six dots of a braille cell. Since most braille cells contain more than a single dot, all or any of the brailler keys can be pushed at the same time. The rollers that hold and advance the paper have grooves designed to avoid crushing the raised dots the brailler creates. Some braillers have been designed to integrate modern computer technology and have applications to support embossing, reading and file storage and audio support for all the operations.

With the advent of computers, many users create braille output using a computer and a [braille embosser](https://en.wikipedia.org/wiki/Braille_embosser) connected to the computer. The SMART Brailler combines ease of use with modern text-to-speech audio/visual technology, that is a speaker and digital display, to support acquisition of skills in the use of Braille. The SMART Brailler includes sensors capturing the mechanical motion of the embosser, and, has the potential to add text-to-speech audio feedback and a digital display for use by both sighted and blind individuals. Many visually impaired users use electronic portable note-taking devices that allow keyboard entry in braille using the 6-key layout of the Perkins Brailler and output in synthesized speech and/or a one or two-line [refreshable braille display](https://en.wikipedia.org/wiki/Refreshable_braille_display) consisting of tiny pins made of metal and plastic. Sometimes known as ‘paperless braille’, a refreshable braille display has a row of braille cells made of plastic or metal pins. The pins in the braille cells are controlled by the computer and match the words on the screen. The braille cells change as the user moves around on the computer screen.

Computers continue to expand additional access to literacy for braille users. Software programs and portable electronic braille note takers allow users to save and edit their writing, have it displayed back to them either audibly or tactually and produce a hard copy via a desktop computer-driven braille embosser.

Web activity WA8.6

Access to education for vision-impaired learners

Have a look at the suggested principles below for managing the preparation of resources for vision impaired learners. If you are a teacher, experienced or in training, or a learning/classroom assistant, how useful might these be as a framework for checking the suitability of lesson planning in classrooms that include learners with visual impairments?

* Include support staff in the planning of lessons so that they know what is required and by when.
* An accessible font size of at least 14 point in Arial) will make the written materials more legible.
* Resources prepared electronically can be saved and modified to produce different versions. Older learners can be encouraged to format resources themselves on their own computers and submit written work electronically wherever possible.
* Extra time may be needed for learners with visual impairments to process information and complete tasks.

1. Levitt, H. (2007) Digital hearing aids: wheelbarrows to ear inserts. *ASHA Leader*, 12(17), 28–30. [↑](#footnote-ref-1)