

Looking beyond the audiogram – case study

Jane Douglas shares a summary of her poster presentation at the University of Manchester 'A holistic approach to auditory rehabilitation with complex needs students'

The auditory system provides us with a wide range of information about people and the environment which we implicitly understand and accept for our overall communication, environmental awareness and general wellbeing.

However, children and young adults with multi-sensory impairments may process sound very differently and require support to enable them to understand their auditory world. This article will explore how someone with complex difficulties may interpret sounds and how we can help them to understand that sound carries meaning through music intervention.

If 'music be the food of life...play on' may be a well worn cliché but for a young, multi-sensory impaired, young man, it literally opens door to communication, social interaction and pleasure, and this article aims to show his auditory progress through an evidence-based music intervention programme.

Certainly it is clearly observable that young people with multi-sensory impairments are very often more responsive to the intonation of song as opposed to running speech, and appear more motivated to interact and engage in musical experiences.

Melodic and rhythmic patterns provide a way to organise auditory information and can be highly motivating for young people with significant sensory deficits to help to explore sound through repetition and spontaneity.

Recent students involving neuro-imaging suggest that music and speech are processed in different parts of the auditory cortex, with a small specific area that responds specifically to vocal songs rather than speech and instrumental music alone.

At Seashell Trust we have developed a highly specialised auditory Aurhythmics programme aimed to develop communication and listening skills for those students with a range of different hearing impairments or auditory processing difficulties.

The sessions are delivered with live music which incorporates several instruments and a singer and are very structured and consistent in order to develop audition and expressive communication. The music is specifically selected according to the student's needs and the melodies, musical patterns and dynamics are manipulated to engage the student and develop interaction with the musicians and singer. Modified intensive

interaction is also utilised whereby the student responds to the musicians initially but this is then turned round to follow the student's actions, which may be mirroring vocalisations, copying a drum beat, putting a sound to an action, or turning this around to making an intentional action to an anticipated sound or song phrase.

Introducing Jack

Jack is a 14 year old boy with CHARGE syndrome who has been attending Seashell Trust since 2013. He presents with a bilateral moderate mixed hearing loss and was fitted with a Cochlear BAHA 4 in 2016 which he uses inconsistently. Jack is non-verbal and has limited communication, using hand under hand signing and Objects of Reference. Additionally Jack has a visual impairment and severe learning difficulties.

Jack attends auditory aurhythmic sessions in Seashell Trust, on a weekly basis and has a very consistent programme delivered by in-house musicians and lead by an Audiologist.

Session Aims for Jack to develop:

- intentional choice-making – choosing between contrasting instruments
- turn-taking – 2-way intentional repetition



Complex needs

- steady beat competency – basic and more complex rhythmic patterns
- pitch perception – preferences and awareness of high/low frequency
- use of musical LING sounds – LING sounds embedded in familiar songs
- shared attention – spontaneous mirroring.

Session Objectives

- To develop listening and anticipation skills.
- To explore and discriminate between a range of songs, musical instruments, pitch, tempo and tones
- To use music and sound to develop verbal communication
- To develop flexibility of thought through music and choice making.

Example of a Jack's Session Plan

- Introduction – Hello song
- Theme song – Jack the Tiger
- Song choice Row, row, row the boat and Wind the bobbin up (Jack to use hand over hand BSL to choose)
- Sing and play 'Drunken Sailor' with hands-up to 'up she rises'
- Bibbidi Bobbidi – Jack to anticipate BOO! Using facial expression or sound.
- 'Can you make the sound I make?' song. Working on Jack's vocalisations of LING sounds on demand.
- Beat matching. Encourage Jack to engage in the music rather than be an active listener. Allow Jack the opportunity to use the conga drum or Kahon to join in Jack the Tiger.
- Goodbye song.

Jack's Auditory Progress

- Intentional vocalisations are more meaningful using LING sounds in vocal play.
- Jack recognises and selects between 3 familiar songs.

- He is focused and engaged for longer periods of time – increased concentration span from 5 to 20 minutes.
- He anticipates 'sabotage' in well known tunes.
- There is emerging pitch perception through his own vocalisations.
- There is increased emotional expression.
- There is observed pleasure and fulfilment through close social interaction.
- There is increased co-ordination through action based songs.

Overall Jack has made steady progress in auditory awareness and is applying new skills to developing intentional communication. He is still unable to hold a beat and he does not consistently turn-take with a communicative partner.

Summary

The audiological assessment of a complex needs cohort is limited by difficulty in observing and agreeing their response repertoire to sounds and tones. Although the Seashell Outcome Measure is still in a developmental stage, the auditory Aurhythmics intervention provides wider auditory experience for student response's to be observed and recorded. The session plans are developed and modified as the student progresses through the generic 'stages of listening' programme/matrix. The programme contributes to overall diagnostic audiological status and providing a holistic rehabilitation package. ■



Jane Douglas' career changed from journalist to audiologist when her first daughter was born deaf. Jane is now a specialist complex needs senior audiologist at the Seashell Trust.

Everyone Together Project ends

At the National Deaf Children's Society Scotland, we recently held a Family Day at Edinburgh Zoo to mark the end of our early years project, Everyone Together. This three-year project, funded by the National Lottery Community Fund, aimed to improve support for families of deaf children and engaged 1820 people from 31 local authorities:

- 671 people from 186 families, including parents, foster carers, siblings and grandparents, attended our events and courses.
- 389 professionals learned more about supporting deaf children through our training.
- 760 children participated in our deaf awareness workshops in schools and nurseries.

We're proud of everything achieved through the project and we would like to say a huge thank you to BATOD members for your support and participation.

We will continue to provide early years support in Scotland, which will include a programme of courses and events, but on a reduced scale. We are keen to partner with professionals and public bodies to deliver our work and develop our offer. If you would like to find out more about our early years work or discuss how we could work together, please email earlyyearsscotland@ndcs.org.uk

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Complex needs

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