

Language and literacy through Cued Speech

New: free THRASS software to teach phonics

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Please note: for those who would like to know more about relevant research information can be found at the end of this article.

Cochlear implants are wonderful things! Many children who could never have learnt English through hearing aids now have access to the spoken language which surrounds them. Small wonder that a myth that implants are miracle cures has developed! But how well do implanted children really do? It seems that although research is a bit contradictory it shows that 'more than half of profoundly deaf children in some studies achieve age-appropriate reading and language scores following cochlear implantation¹. As children are implanted younger the outcomes are only going to get better. This is a huge improvement on the situation pre-implant when a famous study by Conrad in 1979 found only 5 of 202 deaf children had age appropriate literacy.

But some questions jump out:

- If half of the implanted children have age-appropriate literacy and language what about the other half? How can language and literacy be improved for them?

.....and more questions which might lead to possible solutions:

- can the use of Cued Speech help more implanted deaf children achieve literacy and language levels equal to hearing children? If so how?

New: the Phoneme Machine will help deaf children learn phonics

New resources created especially for deaf children by THRASS (Teaching Handwriting Reading And Spelling Skills) are expected to revolutionise the way deaf children learn to read.

The THRASS synthetic phonics programme, pioneered by British Educational Psychologist Alan Davies consists of extensive picture-based training for schools and parents with access to a wide range of resources and support materials. THRASS also run Professional Development Courses. Because both Cued Speech and THRASS are based on the 44 sounds of the English language they work perfectly together.

The THRASS Phoneme Machine

Deaf children's access to literacy resources has been given a huge boost with the development by THRASS, as part of THRASS' Corporate Social Responsibility Programme, of a new version of their FREE software, the THRASS 'Phoneme Machine'.

The Phoneme Machine software:

- comes in three sections, the interactive Calendar, the Word Grid and the Phoneme Grid all of which have a Cued Speech version
- is suitable for learners of all ages and abilities
- is an excellent resource for teachers, assistants and parents
- has been found to be particularly helpful for use with children starting to read, children finding reading difficult and those for whom English is not their first language.
- uses human lips to pronounce the sounds (phonemes) in hundreds of frequently used English words

- in the Cued Speech option (which can be turned on and off) the shapes, positions and movements of the hands are displayed alongside the moving human lips, with the cueing for each of the 500 basewords of English demonstrated in a video box.

Download the free THRASS software the Phoneme Machine from:

<http://www.phonememachine.com> and follow the links to DOWNLOAD Instructions.

Instructions on how to make best use of the THRASS Phoneme Machine 6.0 can be found at

<http://www.thrass.co.uk/PM5/instructions.htm>

For general information about THRASS <http://www.thrass.co.uk/downloads.htm>

How does learning phonics fit into learning to read?

Several skills are involved in learning to read. If I could take 3 years off work I would love to study it properly but meanwhile I have gleaned the following from general literature and research: it seems three of the most important are that children:

1. have a good working knowledge of the grammar and vocabulary of the language they are reading
2. have a reasonable short term memory so that they can remember the beginning of the sentence by the time they reach the end and
3. know how sound-based spoken language ties in with sound-based written language (phonics) so that they can make the association between the two.

If deaf children can not hear all the sounds of speech (through aids or implants) they have problems in all three areas. Firstly they struggle to understand language - because they can't hear it all!. Also whilst they may not have problems with short term memory in general – they may perfectly remember sequences in video games for example – they have problems with short term memory for words and sounds. This is because the short term memory for language works best if the words to be remembered are clearly different, but if they are similar (for example when they rhyme) they are remembered less well. For deaf children, who hear imperfectly, many words sound or look like each other and consequently deaf children frequently develop short term memory problems. Finally, it is self-evident that deaf children without the ability to hear all the sounds will struggle with phonics.

The early and consistent use of Cued Speech, preferable both at home and later at school, solves all these problems. It ensures the understanding of language². Also with Cued Speech use each word now looks clearly different children brought up with it have similar short term memory skills as hearing children. Research shows that deaf children with early and consistent exposure to cueing at home and at school demonstrate word coding, memory, and reading abilities similar³ to hearing peers, and superior to deaf children from other communication backgrounds³ and superior to children exposed to cueing only at school⁴.

Finally, what about access to phonics? Because Cued Speech makes every sound-based unit of speech or phoneme (a phoneme is a single unit of sound – like /b/) clear and visible it is perfect for phonics teaching. With it deaf children can:

- understand that English is made up of phonemes – both as part of the whole language and word-by-word
- learn, just as hearing children do, to make the association between the phoneme that they see on the lips (but may not be able to hear) and the phonemes represented in written language.

Cued Speech makes it possible for deaf children to be taught to read through phonics by identifying the individual 'sounds' within the words EVEN if they cannot hear those sounds. For more research information see⁵.

One parent, whose son was implanted at two and a half years old wrote:

'A momentous transition for W came about as he began to be introduced to phonics alongside his hearing peers in the classroom. Much to our amazement, he not only coped with phonics, but seemed to take to it more quickly and easily than many of the other children in his year-group. Perhaps, we wondered, similar pathways in a child's brain are important for reading text as for "reading" Cued Speech? Since Cued Speech is a phonic-based system, it is, perhaps, not surprising that four years of previous exposure to Cued Speech helped him get to grips with early phonics-based reading skills at school? The ease with which he mastered phonics, combined with his knowledge of English language, has made W's rapid transition to literacy a joy to be involved in. He is now in Year 2, and his reading age, measured alongside his hearing peers in a recent standardised test conducted by his class teachers, when he was 6 years old, came out as equivalent to 9.5 years. His ability to read and write is already opening up so many doors for him in his wider learning and development. He accesses a great deal at school now through his reading, and this, we hope, will help him in his transition to Key Stage 2 next year. He reads constantly all kinds of books at home; he is able to surf the internet independently to find sites and information about all manner of things that he is interested in; and he now reads all the subtitles when watching TV because he doesn't want to miss a single thing. He fully expects to access and be included in everything these days, and he is very assertive in making sure that that happens.'

Cued Speech can also make phonics accessible for older deaf children who have little or no understanding of English. They can be taught the 44 'sounds' of English and their spelling choices directly through Cued Speech, and can both simultaneously and subsequently - learn written and spoken English. In late 2006 pioneering work at the Exeter Royal Academy for Deaf Education (ERADE) introduced Cued Speech to sign-using pupils to teach phonics. These students had little prior knowledge or understanding of English, either written or spoken, and found direct access to English and in particular access to phonics very hard. Research was carried out on six pupils, five of whom had, in addition to deafness, mild/moderate to severe unspecified learning and language processing disorders. Of the six, half had cochlear implants and the other half wore hearing aids but they are reported as 'not learning through listening'.

Students attended Cued Speech lessons for between 28 hours and 114 hours (an average of 76.6 hours). Phonetic awareness, measured by CELF – (Clinical Evaluation of Language Fundamentals) improved by an average of 2 years and 3 months. Two students who received the most input had improvements of over 5 years.

A teacher wrote: 'The use of Cued Speech simultaneously with Synthetic Phonics is giving these pupils a real understanding of how spoken languages work and of the relationship between spoken and written English.'

With the help of a professional who uses Cued Speech deaf children can use many of the same resources as hearing children but the new THRASS Phoneme Machine will – for the first time – provide outstanding, interactive phonics resources specifically for deaf pupils.

What is Cued Speech?

Cued Speech use makes **the whole of spoken language** visible to deaf babies and children by clarifying the lip-patterns of normal speech. It is a lip-reading supplement. It is estimated that people can lipread only about 35% of what is said – the rest is guesswork.

Cued Speech clarifies lip reading by using eight hand-shapes in four different positions near the mouth to represent the 44 sounds of English. You cue as you speak. The combination of the hand shape, the hand position and the lip shape makes every sound of spoken language clear,

so that 96% of spoken language can be lip-read accurately. Of course, children can also hear what you say if they use a hearing aid or implant.

The many benefits of Cued Speech follow on from the simple fact that, with its use, deaf children can see whole language and all the sound-based units of speech. If Cued Speech is used by the family and teachers deaf babies and children - whether they can hear anything or not - can see and understand sound-based language as it is spoken. They can learn English at the same speed as hearing children.

Does Cued Speech help implanted children use their implants?

Research – mainly from France (where thousands of families use Cued Speech) - has looked mainly at children who have had Cued Speech prior to implantation. There is not a large body of research but what there is points to clear advantages if children have access to Cued Speech⁶. The advantages seem to stem from the fact that deaf children who have had Cued Speech bring an understanding of sound-based language (accessed through Cued Speech) to the language they hear through their aids.

Parents in this country also report advantages:

The parent previously quoted wrote:

'His chances of benefiting a great deal from an implant had looked slim due to the nature of his hearing loss – a highly unusual combination of auditory neuropathy and thin (or, on his left side, virtually absent) auditory nerves. It is clear that he doesn't get as much useful hearing from the implant as would be expected in a more straightforward case. Yet, despite this, he has managed an extraordinary transition from a child who was totally dependent on visual communication to one who is almost entirely reliant on spoken English for all communication at home and at school. Given the comparatively poor quality of his hearing with the implant, we are convinced that a crucial factor enabling this transition must have been his early understanding of Cued English, [a term used to mean Cued Speech used with English] which, as we continued to use it after his implant, provided him with a supporting 'scaffold' to help him make sense of the new speech sounds that he was hearing and relate them directly to the language that he already knew.'

Professionals and parents learning Cued Speech

To help a deaf child make the best of the THRASS Phoneme Machine, and to make all of spoken language visible, parents and professionals need some level of skill in Cued Speech.

Learning to cue is quite unlike learning a new language. Because Cued Speech is a sound-based language tool – not a language – hearing students learn a new way of expressing their own language. An essential part of each course is learning about the sounds that make up spoken language but there is no new vocabulary or grammar to learn.

It is possible therefore to learn to cue in only a few days – although cueing will be slow to start it will improve with practice. Parents of deaf children and supporting professionals are able, without delay, to express their own language in a way that is totally clear by vision for deaf children.

It takes 20 hours to learn the basics of Cued Speech. The basics can be learnt through e-learning, through face-to-face tuition or a mixture of both. It is recommended that e-learning is supported by some face-to-face tuition where possible.

Research notes:

1. Neuropsychological Correlates of Vocabulary, Reading, and Working Memory in Deaf Children With Cochlear Implants Mary K. Fagan, David B. Pisoni, David L. Horn, and Caitlin M. Dillon J. Deaf Stud. Deaf Educ. 2007; 12: 461-471.
2. Deaf children of hearing parents who cue their native spoken language have been found to develop that language according to the same milestones as hearing peers (Kipila, 1985; Anthony, Moseley, & Williams-Scott, 1991; Metzger, 1994). Hearing parents can learn to cue at a rate and accuracy level sufficient to deliver linguistically complex information to their deaf children within 2-3 months of learning the system (Torres, Moreno-Torres, & Santana, 2006). Deaf children exposed to multiple languages by fluent models of those languages can develop both languages and become bilingual in a fashion similar to hearing children (Earl, 2006). Cueing provides children with access to complete language, including such function words as prepositions, often missed by deaf children from other communication backgrounds (Santana, R., Torres, S., & Garcia, J. (2003). Indeed, deaf children whose parents and teachers cue (and/or who work with skilled transliterators) have been found to develop the written forms of spoken languages in ways similar to hearing children of hearing parents (Cornett, 1990; Leybaert & Alegria, 1993; Leybaert, Alegria, & Foncke, 1983; Perier, Charlier, Hage, & Alegria, 1988). Summary taken from Research Supporting the use of Cued Speech and Cued Language Compiled by Kelly Lamar Crain, Ph.D. The University of South Florida
3. Wandel, 1989; Leybaert & Charlier, 1996; Ketchum, 2001
4. Leybaert & Charlier, 1996
5. Deaf children with early and consistent exposure to cueing develop a phonological representation of words in their language, and can learn phonics generalizations for spelling in the same way as hearing children who speak the language (Alegria, Dejean, Capouillez & Leybaert, 1990; Leybaert & Charlier, 1996; Leybaert & Lechat, 2001). Individuals with early and consistent exposure to cueing in childhood demonstrate an awareness of phonology and reading comprehension commensurate with hearing peers (Coryell, 2001; LaSasso, Crain, & Leybaert, 2003). Children exposed to cued French demonstrate rhyme judgment and rhyme generation abilities similar to hearing peers, (Charlier & Leybaert, 2000), as do children exposed to cued American English (Crain, 2003).
6. Osberger (1997) reported results of an FDA (United States Food and Drug Administration) clinical trial on the efficacy of cochlear implants for language development in young children, in which children raised with Cued Speech were included as a discrete group. Results from the clinical trial suggested that exposure to Cued Speech provided a benefit pre- and post-implant, as compared to the other groups of children. Vieu, Mondain, Blanchard, Sillon, Reuillard-Artieres, Tobey, Uziel and Piron (1998) studied Cued Speech, Oral, and Signing groups of children at annual intervals post-implantation and found that, while all three groups made progress in speech intelligibility and spoken language ability, the Cued Speech group generally outperformed the other two groups of children. Descourtieux, Groh, Rusterholz, Simoulin and Busquet (1999) discussed a series of case studies of cueing children fitted with cochlear implants that, when considered in sum, suggest that early and consistent access to Cued Speech pre-implantation provides a superior foundation for the acquisition of spoken language after implantation. Cochard, Calmels, Pavia, Landron, Jusson, Honegger and Fraysse (2003) did investigate several auditory, communication, and family-related factors implicated in the development of deaf children who receive cochlear implants, and found many benefits associated with early and clear exposure to Cued Speech. Summary taken from Research Supporting the use of Cued Speech and Cued Language Compiled by Kelly Lamar Crain, Ph.D. The University of South Florida