

## **The Importance of Thinking Words**

This paper is based on a single, simple assertion. Only if in face-to-face communication, as a result of that communication, a child consistently thinks English words, will that child learn English rapidly and efficiently. This is true whether the child has an auditory deficit or not.

Auditorily deficient children can be taught English words. They cannot be taught words through signs, but in signing programs they can be taught English words by stopping the signing momentarily and fingerspelling or writing the word corresponding to the related sign. Efficiency is lowered because of the interruption of communication that is necessary, but this is not the important point. To see the crucially important point it is necessary to consider how the brain works, what it forgets and what it can recall.

### **Forgetting**

A very important ability of the brain is its capacity to forget. Without the ability to forget most unimportant or trivial information, without conscious effort, the brain would become overloaded and unable to assimilate new information, within a few days. This is exactly what happens in a computer which has a hard disc capable of storing 200,000,000 bytes of information, if new information is added each day in large quantities and nothing is erased. But our wonderful brains forget, in a day or so, all the unneeded or temporary information that is bombarding us ceaselessly, through our senses. Thus we are consistently ready to take in new information and use it.

### **Remembering**

A child's learning new language is not a simple matter of teaching him or her new words. New words, once learned, will be forgotten if not encountered repeatedly, while they are still remembered, so that they become permanent in the mind. With a hearing child, or a child exposed consistently to Cued Speech, all communication provides repeated exposure of words already known, pushing them further into the core memory, the permanent vocabulary.

If a person has occasion to call a telephone number he has not seen before, he may or may not be able to retain the whole number while dialing it. Most people, in order to remember it in one piece while dialing, must concentrate for a bit and visualise it clearly. If it is visualised clearly enough to dial it without stopping to look at it during the process, it is quite likely that the next day one can recall the number but it is not likely to be recalled after two or three days, or a week. If, however, the number is recalled the next day, one is likely to be able to recall it a week after that.

Four or five uses of the number on successive days will make possible recall of it for months. This visual refreshing of an image can expedite retention of anything: dates of historical events, formulas in chemistry, or words in a foreign language. I have taught hundreds of college students to use a simple daily procedure to ensure that they will remember indefinitely all important material they learn. On a small slip of paper they write each stimulus, say, the words sulphuric acid. The student associates visually with those words all that he wants to remember about sulphuric acid: its formula,  $H_2SO_4$ , that specific gravity of a normal solution of sulphuric acid, etc. All this information can be captured and visualised by the brain in less than one minute. For most persons, it will be retained if checked the next day but not after two or three days. The key is that if one looks at the stimulus words sulphuric acid the next day and again a day later, and so on for a total of four or five days, re-visualising the associated material from memory, all the information will be retained indefinitely. A college student who jots down the key words associated with each important item he learns during a day, and reviews all of them at intervals of about 24 hours for four days, can practically dare the teacher to stump him or her regarding the facts. I have often compared this method of memorising permanently to applying a solid one-fourth-inch-thick coat of paint to a small section of a wall. One cannot do it all at once. But, a two-inch-square patch on a wall can be coated with paint to a depth of one-fourth inch in less than a minute of painting time, if that minute is used in five-second pieces, each to apply a thin coat of paint to the surface, and wait 24 hours between coats. Visual memory operates analogously.

### **Learning of English in a Total Communication Program**

Now let me apply the above to the learning of English by a child with a profound hearing deficit (PTA threshold 90dB or more), in a TC program. In a TC program the English words are taught to the child specifically through the written or fingerspelled form. This process is slow, because it interrupts the flow of communication, taking extra time and damaging enjoyment. However, this is not the principal reason that the acquisition of English is so slow. The problem is that subsequent communication in signs, using specific signs associated with English words the child has been taught, does not bring those English words to the child's mind again! Once a new word is learned, if subsequently it does not come to the mind again for several days, it will be forgotten, and must be relearned. Thus teachers in a TC program must be sure to review in writing all new words taught, each day for several days, to produce extended recall. Even if that is done, the process will not be as efficient as the normal one in which every subsequent encounter with a word newly learned makes it increasingly familiar and easy to handle.

During the first two years I served at Gallaudet as Vice President for Long Range Planning (1965-75), I obtained the evidence that encountering signs in communication does not bring English words into the mind of a child whose usual mode of communication is an English-based sign system. I could see no reason

why teachers should speak when they signed, because I could not believe that simultaneous speech would accomplish anything. In my travels to schools for the deaf I took occasion to interview 400 signing children, in groups of 10 to 50 or so. In each case I signed and spoke to them, saying first: "I want to communicate with you, and then ask you what happened in your minds – okay?" They were always willing, so I proceeded to make quote signs in the air and continued signing and speaking, as follows: "I want you to work on you notebook now." I signed and spoke all the words except one, notebook, which I spoke and fingerspelled, for a reason that will become clear. Next, I asked: "Did you understand me?" All answered yes. "As I communicated to you in your mind, did you hear the words?" All answered negatively. "Did you say the words in your mind?" All said no. "Did you see the words in your mind?" Seven said yes, 393 said no. "Which words?" All seven identified notebook, which I had delivered in a code for written English. "Did you write the words in your mind?" All answered negatively. My final question was: "Do you know the words for all the signs I used?" All 400 children answered that they knew the words. I submit that I covered all the ways in which it is possible to think an English word as a result of receiving it in communication, unless one counts unrelated modes such as Morse Code. My conclusion was that signed communication, even accompanied by speech, does not bring English words to the mind of a child who communicates primarily in signs, even if the child already knows the words. This is not a weakness of signs. Languages such as Spanish and French, likewise, do not bring English words to the minds of a skilled user of those languages. Only if one knows those languages so poorly that he/she must translate them literally into English words in order to guess what is meant is there any tendency to think English words.

The profound implication of the preceding can be stated as a question: "If signs, even accompanied by speech, do not cause the corresponding words to come to the mind, just when is a deaf child going to get enough exposure in English words to produce the degree of familiarity and ease of recognition and use that is necessary for reading, writing, and oral communication?"

Now consider what will happen if hearing parents of children in signing programs use Cued Speech consistently at home, for everything they say. The first advantage is that the parents already know all the language they need to use with or teach to the child. Second, the parents can make any word clear to their child. A trip to the zoo is no challenge; the parent can identify such animals as an alpaca, an otter, a baboon, a giraffe, any kind of bird or reptile – anything and everything – from the names on the cages or enclosures. But, the third point is the most important: if there is discussion of the trip to the zoo the next day (and there should be), every mention of every animal encountered on the visit will renew the memory of that animal and its name. The process of making new vocabulary permanent is easy, natural and enjoyable, if the parents simply take the opportunity to relive the interesting activities they have shared with their child, as any good parent should do.

In 1978 I wrote to 15 deaf teenagers who had grown up with Cued Speech, asking them to tell me what happened in their minds when they think.

Thirteen replied. Eleven wrote back using the identical words; "I hear myself talking". Another who has no measurable hearing wrote: "I feel myself talking". The other one, the most oral of the group, replied: "I see the words." All were reported by their parents to talk in their sleep. All confirmed that in their dreams they could lipread everyone perfectly, and everyone could understand their speech. These young people all think in the spoken language and use it as their base for reading. They have all grown up in the mainstream, with Cued Speech transliterators, receiving and digesting the same raw English received by their hearing classmates, and developing the same level of sophistication in English.

For many years, in every workshop on CS I have conducted that was attended by TC teaches I have asked them to tell me why they speak and sign at the same time. Not one has told me the principal reason. They have given answers such as: "So the children will learn to lipread." "So the children will use their hearing." "So they will learn spoken words." The best answer they gave was "Because we are instructed to do so." After I noted in each case that they had given a possible reason, but not the principal one, I explained that they speak with their signing because they want the children to do the same, and they could not expect the children to do it if they didn't. I then explained that they wanted the children to speak when they signed because only when the children speak can the teacher be sure they know and are thinking English words. Every time I gave the explanation the teachers agreed that I was right about the principal reason for speaking and signing simultaneously.

### **What about aural/oral programs?**

If, in an aural/oral or auditory/verbal program, with or without a cochlear implant, a child can acquire English rapidly enough to become a good reader on schedule, without so much pressure on child and parents as to damage either the child or the parents or rob the child or them of too much of the important things of life, that child does not need Cued Speech. Only a minority of children with a prelingual and profound auditory deficit are able to do this. For the majority of children who are prelingually and profoundly deaf, the traditional oral approaches are inadequate unless Cued Speech is incorporated into both the school program and the home. Let us examine the facts that support this conclusion.

With traditional oral methods alone, the learning of new language is too slow and laborious for most children with a profound auditory deficit. For such children oral programs do the same thing the TC programs do, revert to teaching English through the written form. The simple truth is that new language cannot be either learned or refreshed efficiently through a defective input.

In June, 1888, Dr. Alexander Graham Bell (1892, p.26, par. 21,567) made the following statement to the Royal Commission of the United Kingdom on the Condition of the Blind, the Deaf and Dumb:

“I think that with the congenitally deaf to commence their education by speech reading, to commence to have the child read words from the mouth, before he knows the language, interferes with his mental development, retards progress in the acquisition of language, and thus defeats its own end, and retards the acquisition of speech-reading itself.”

“So far as my observation has gone, if a pupil is taught to rely upon the mouth for communication, before the language is acquired, it interferes with the acquisition of language; but if he is taught the language before he relies upon the mouth, then the knowledddge of the language enables him to acquire the art of speech-reading.”

The same problem applies to learning new language through audition alone. For most profoundly deaf children it is an ambiguous and incomplete message, inadequate for rapid and efficient acquisition of new language. Both speech-reading and audition furnish fractions of the speech message. For some children the combination, speech-reading with the aid of audition, can eventually result in efficient learning, but for the majority the combination is inadequate. The bottom line is whether the child is acquiring English fast enough and handling it easily enough. With the aid of Cued Speech, especially at home, many more children in oral programs can learn language rapidly and efficiently. Then, for some, their skills at speech-reading with audition can be developed to a point at which they can perform well aural/orally with familiar language.

It should be recognized that the difficulty of learning new language orally or auditorially is not the only problem. A second problem is that after a child learns a new word laboriously through traditional oral methods, his/her ability to speech-read (with audition) that new language may not be good enough that when he encounters a newly learned word in oral communication he/she does not recognize it, and therefore the all-important refreshing of the newly learned word fails to happen. So the problems, and the results, for a majority of profoundly deaf children in both oral and TC programs, are much the same. Both need Cued Speech as a supplementary tool for use with the majority of profoundly deaf children.

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