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TEACHING READING TO THE HEARING-IMPAIRED CHILD

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His name was Jimmy _____. I remember my sense of apprehension when I saw that name included in my first-grade roster. It was not because he was older than the others, having spent two years in kindergarten, or that he was noticeably bigger. Jimmy was deaf. How, I wondered, could I help this child? How, indeed, could I cope with his handicap?

Because of recently enacted federal legislation which requires that children with handicapping conditions receive their education in the "least restrictive environment" more children like Jimmy will be found in regular classrooms. More teachers will be faced with the responsibility of teaching them. This does not mean wholesale abandonment of hearing-impaired and other handicapped children from the special resources available to them in the past. It does mean that such children will be spending more of their school time in regular classes. Here they will continue, in most cases, to receive direct assistance from specially trained persons on a part-time basis, or indirect assistance via the classroom teacher who, in turn, will receive instruction and help from the special teacher serving as a resource person. In any event, the regular classroom teacher will have an increased responsibility in the education of the hearing-impaired child.

Hearing-impaired is a generic designation indicating a continuum of hearing loss from mild to profound. The hearing loss is measured in decibels (dB) which is the unit used to measure the relative intensity of sound. Following are the categories of hearing-impairment: *mild*—loss of 27-40 dB; *moderate*—loss of 56-70 dB; *severe*—loss of 71-90 dB; and *profound*—loss of more than 90 dB. Possibly because of better nutrition and more effective treatment of infectious diseases, there are fewer deaf children today than in the past. There are also fewer so-called "normal deaf," those without additional handicapping conditions. The *rubella* epidemic of several years ago produced children with various combinations of orthopedic, visual, auditory, and other categories of handicapping conditions. However, the single most serious impediment to successful school achievement in general and to learning to read in particular is the deaf child's impaired language function.

THE PROBLEM

Studies of the academic achievement of the deaf invariably find a serious educational lag when compared to the hearing population. Dale (1974) estimates that normally hearing children may have a speaking vocabulary of some 2000 words by the time they enter kindergarten. The deaf may use only 250 words by the same age. The problem appears to

become accelerated with increasing age. Rosenstein and MacGinitie (1965) note that younger deaf children outperform older deaf children proportionately. Hargis (1970) reports a discrepancy of approximately eight years between the mean reading achievement of hearing and deaf children when the comparison is made after the completion of their regular educational programs. Wrightstone, Aranow, and Muskovitz (1962, 1963) used the Metropolitan Achievement Tests to study the performance of over 5,000 deaf children in 73 school programs of various kinds in Canada and the United States. They found that the children's average gain in reading achievement in the age span of 10 to 16 years was less than one year. The sixteen-year-olds were found to have an average reading achievement grade of 3.5. Hammermeister (1971) used the Stanford Reading Achievement Test to measure the performance of deaf adults who had completed their education at a residential school 7 to 13 years earlier. Significant gains were made on word meaning but not on the test of paragraph meaning.

That there was no improvement with age in the comprehension of meaning expressed in paragraphs is significant and central to the problem of language mastery by the deaf. As Goodman (1970) indicates, reading is a complex process which involves the reconstruction of meaning encoded in written language. Its purpose is the comprehension of meaning intended by the writer. Comprehension results from the reader's active sampling from and hypothesis-testing on the three categories of cue-systems which reside in English: grapho-phonetic cues arising from the relationship of sounds (phonemes) and their written symbols (graphemes); syntactic cues arising out of the arrangement or order of words; and semantic cues which reside in the meanings of the words in a passage. More proficient readers rely less on grapho-phonetic cues and more on syntactic and semantic cues than less proficient readers in extracting the meaning from written material. It is precisely in the areas of word meaning, particularly idiomatic, figurative and abstract meanings, and syntax that the deaf have been found to be deficient. For example, Quigley, *et al.* (1976) found that the syntactic rules of standard English were not well established even in eighteen-year-old subjects. Only simple transformations such as negation, question formation, and conjunction were mastered and then not completely so. Quigley, *et al.* speculate that the deaf may perceive English as a linear rather than as a hierarchical structure. For example, they may impose a subject-verb-object pattern on sentences in which this order does not apply, or they may connect the nearest noun and verb phrases. In any case, the deaf do not have access to syntactic and semantic cues to the degree that the hearing do. The deaf child, like the less proficient reader, has to rely on the less efficient grapho-phonetic cues. Hartung (1970) found no difference between deaf and hearing 7½-9 year olds in the kind of visual perception skill which is necessary for use of grapho-phonetic cues. More than fifty years ago, Gates and Chase (1926) found deaf children to be superior to hearing children in the word perception skills used in spelling. Yet, their relative inability to utilize semantic and syntactic cues may contribute to the low ceiling of about fourth-grade level obtained by so many deaf persons in reading achievement.

There are probably other contributing and confounding factors as well. For one thing, the impact of a deaf child in a hearing family (90% of deaf children are born with hearing parents) is great. The natural, spontaneous verbal interplay between mother or other caregiver and the infant and toddler is often sharply curtailed or absent altogether. Gross (1970) found that mothers of deaf children used less praise and more verbal antagonism than mothers of hearing children. Under such conditions the child is not stimulated to continue exploration with its vocal mechanism. Continued linguistic development may be impeded in a linguistically neutral or negative environment.

Traditional deaf education practices have been cited by Furth (1966) and Kohl (n.d.) as contributing to the retarded language development of deaf children. The oral method of teaching the deaf to speak emphasizes lipreading, learning sound elements and combinations, phonetic spelling, and reading of orthographic forms of English. This has been the predominant mode of teaching language to the deaf in the United States. It is hypothesized that its major appeal lies in the assumption that it can teach the deaf to speak. What has always stigmatized the deaf is not their inability to hear, but their inability to speak. To speak, to communicate in oral language is taken as a sign of human intelligence. Not to be able to speak is to be cast in with the lot of those who are less than human. Animals are called dumb because they cannot speak, so are the deaf who have not mastered oral communication. It is no coincidence that the deaf for many centuries were classed with the insane and retarded.

Despite many years of instruction in the oral method or some variation of it, however, a natural sign language persists as the most popular means of communication among the deaf themselves. Even in schools or programs where signing is expressly prohibited, one can observe children using this technique to communicate among themselves. Interestingly, an administrator in a special school for the deaf remarked that it was the most highly verbal children who were most resentful of being prevented from using sign language. Obviously, the deaf themselves find this their most effective means of communication. Furth (1966) recommends that parents use a discriminable sign language with their deaf children for the first three years. If parents made a discriminable sign for each word as they spoke it, Furth contends, the child would learn the natural language. The child would sign according to English syntax. The signs could be transliterated later to written form for the child to read.

The natural sign language used by the deaf does have some structure and consistency. Yet, it is so context-bound, dependent on paralinguistic cues, concrete, and subjective (Trevoort, 1961) that it can neither be as efficient nor sophisticated a mechanism for communication as a true linguistic system. However, the predominance of the oral method is diminishing with the concept that the deaf themselves or their guardians ought to be able to decide which system is used. A recent New York State law, for example, mandates that a school for the deaf offer more than one teaching methodology so that parents have the option of choice. Today,

most schools offer, in addition to the oral method, one called total communication which is a combination of the oral and manual (sign) language methods.

LEARNING TO READ

Basic Conditions

There are certain basic conditions which must be met in order to establish the most favorable environment for teaching the deaf child to read. First, the teacher must acknowledge honestly his or her own feelings about hearing-impairment in general, and about having a hearing-impaired child in class. It is better to acknowledge feelings even if they are negative, than to attempt to ignore or cover them up. Most teachers will respond to the idea of a deaf child in class with a good bit of anxiety—"Oh no, why me?" may be the response. The teacher, who is usually already burdened with many responsibilities, may find this just one too many, particularly if the teacher feels lacking in the necessary skills to work successfully with the hearing-impaired child. Knowledge is often the best antidote for fear. The teacher should seek out good references on teaching the hearing-impaired, visit a local school for the deaf, enroll in a college course that deals with educating the handicapped, and consult with specially trained personnel, if they are available.

Understanding his or her own feelings, the teacher will be in a better position to help the rest of the children in the class relate positively to their hearing-impaired classmate. The child's hearing impairment should be acknowledged openly. It should be understood as simply one additional physical feature of the child. Children will be very curious about the child's hearing aid. Its function should be explained simply. The teacher's goal is to establish good peer relationships by removing any mystery which surrounds the hearing-impairment, and by dealing with it openly, honestly, and humanely. The teacher should become quite familiar with the hearing aid apparatus so as to be able to respond to signs of its malfunction. For example, the child's inconsistent behavior might be caused by a problem with the hearing aid such as fluctuating amplification.

Finally, a child's hearing impairment will necessitate certain simple physical accommodations which soon become quite habitual. For example, if the child relies primarily on lipreading, Northcott (1970) advises that you use a natural, clear voice accompanied by normal facial expression. In speaking to the child, face the light or window and stand at a distance of about three feet, positioned at the child's eye level.

Vocabulary Development

The significance of oral language for learning to read which has been highlighted by psycholinguistic theory is as valid for the deaf as for the hearing child. However, the understanding vocabulary of several thousand words and the unconscious grasp of the syntactic features of English which we expect to be present in most native-speaking first-graders, *cannot be taken for granted with the deaf child*. While experiences to increase vocabulary are a part of all reading programs, they are at the very heart of

reading programs for the deaf. As Streng (1964) observes, language is the primary concern in teaching deaf children to read.

The development of vocabulary should be a central and continuing activity in each day's plan. Fitzgerald (1957) indicates that systematic and consistent training in vocabulary is necessary in each subject and in relation to every activity. The development of vocabulary is begun quite informally when the child first enters school and centers on the child's own personal being—his or her interests, needs, and activities. The Clarke School (1972) advises that formal vocabulary development begin when the child can use some spontaneous language. At this point, daily experiences which are repeated routinely are the ones to which vocabulary is related: recess, snacktime, lunch, library, etc. As the child's interests widen, so does the range of vocabulary development: television programs, vacations, trips, neighborhood, etc. Words are never presented or used in isolation. They are always used in meaningful contexts.

Vocabulary activities include: labeling, such as parts of the face, kinds of clothing, children's names; classifying and categorizing objects such as sorting plastic tableware by kind and color; pairing synonyms; linking appropriate adjectives with a given noun; classifying verbs according to action such as movement verbs, sound verbs, feeling verbs; and experiences with words of multiple meanings. For example, to help the child understand the different meanings of the word *make* there should be planned experiences of *making* foods, *making* presents, and *making* constructions out of various artistic media. Subsequently, as the speaking vocabulary begins to form the core of the reading vocabulary, charts are made to display, illustrate, classify, and categorize new words. In addition, the deaf child's vocabulary development will be facilitated by the presence of hearing peers whose spontaneous language models enrich the verbal milieu.

The significance of the parents' role in the child's language development should not be underestimated. The teacher will want to develop a cooperative relationship with the parents so that home and school can work together to build the child's language function. The Clarke School for the Deaf (1972) offers these suggestions to parents: talking with the child in complete sentences; making a conscious effort at adding new words and phrases; having a positive attitude toward the hearing aid, being certain that the child wears it all the time, and checking regularly to see if it is in working order; being a good listener, allowing the child to express him-or-herself; telling and reading stories aloud; providing meaningful and enjoyable experiences such as cooking and taking trips; providing a positive atmosphere toward reading in the home—letting the child see reading being done regularly and routinely by all family members; and visiting the public library regularly.

Word Recognition

The first printed words presented to the child should be highly familiar ones which have distinct physical or configuration features. The child should be taught an awareness and recognition of his or her name first as it

appears on personal possessions such as a lunchbox or cubby hole, and later as it appears in a sentence that is meaningful to the child. When a child has mastered its own name, awareness and recognition of classmates' names should be taught. Then the child is introduced to names of others such as pets and family members. From this point the child is introduced to connected language in meaningful contexts. On completion of an activity the teacher discusses it and writes a simple descriptive sentence. The child then illustrates the sentence. Familiar words are noted and identified in different settings such as books and filmstrips. Activities to give practice in noticing similarities and differences in visual patterns are begun: matching identical pictures; matching identical letter forms; selecting a word which differs from the others; matching words; associating printed words with pictures; associating printed sentences with illustrations. Words that are mastered should be printed on one inch cards which the child keeps and reviews. These word cards are also used by the child to construct sentences. The manipulation of words as sentence segments into proper positions helps to give the child a visual representation of language structure. As the child gains proficiency in perceiving specific characteristics of printed material, the teacher introduces additional word recognition techniques such as phonics, structural analysis, and phonetic respelling.

Comprehension

Practice in comprehension of spoken language will naturally precede activities designed to improve reading comprehension. For example, the teacher makes an oral command, statement, or question to which the child responds. Later the child's response will be to a written command, statement or question. The child will work with picture stories, first single and subsequently two-or-three sentence stories. The child selects which picture is illustrative of the story. Or, the child physically enacts or dramatizes the meaning of first a single sentence story, and later two-to-three sentence stories. To build sentence memory the child responds to simple commands written and shown on flash cards. To give practice in recalling story sequence, the child rearranges a series of simple illustrations to conform to the correct sequence of events. Or, an experience chart can be composed on sentence strips which are scrambled. The child then rearranges them in the order that the events actually occurred in the experience.

After the child has acquired some skill in literal comprehension of written material, practice at the interpretation level is begun. For example, in order to teach the child to recognize a passage's main idea a sequence of activities such as the following may be used: the teacher asks specific questions which the child answers and from this the teacher formulates the main idea; then the teacher asks specific questions which the child answers, but in this activity the child formulates the main idea; then the child both asks the questions and formulates the main idea; finally, the child formulates the main idea immediately after reading the story. Variations on this sequence involve having the child read a paragraph and then select or write a title for it. Or, give the child a title and have the child compose a story for it.

Problems in comprehension usually arise for the deaf child with the use of more complex reading material which is marked by idiomatic and figurative language, and sophisticated syntax. As noted earlier, it is precisely in these domains where the deaf child's language is deficient. Some believe as Streng (1964) does, that mastery of reading material at the intermediate level and above by the deaf child requires a planned, systematic program of instruction in the basic structures of English. In any case, the teacher must preview selected reading material very carefully for potential causes of difficulty such as colloquial, metaphoric, and figurative language and then provide the child with direct instruction on these points. The teacher will stress the importance of the verb as the word that directs the action of the sentence. The child will be taught to find the verb in complex sentences or those with unusual word order. The teacher will instruct the child to locate the subject and verb and then think the meaning of the sentence through. It is essential to relate the more complex meanings encountered in intermediate level and above reading material to actual experiences the child can understand. If the child, for example, has difficulty understanding the conditional, the teacher might say, "Remember Jimmy, we said that *if* it doesn't rain, *then* the class can go outside after lunch." Then this is related back to the written sentence in question.

Reading Materials

Quill (1959) cites the following as prerequisites to introducing the deaf child to reading from books: an understanding vocabulary of at least 500 words; a grasp of connected language with some skill in using it; sentence memory; skill in the mechanics of reading such as left-to-right eye progression; and a desire to read. Actually, the teacher will create much of the child's beginning reading material primarily in the form of experience charts and individual booklets. These begin with a single line which is accompanied by an illustration. Gradually, these charts grow to two and more simple sentences which are also illustrated. Most of the early charts will illustrate a single verb, such as

We *see* stores.

We *see* houses.

Then charts will incorporate sentences with two or more different verbs:

We went to the zoo.

We saw animals.

Later, the charts will begin to incorporate a beginning notion of the paragraph. Even though sentences are still written on separate lines, they now begin to show a clearer relation to each other. For example,

Mary has a new dress.

It is pink and white.

Her new dress is pretty.

Thus, in a rather carefully programmed manner, the deaf child is gradually introduced to language of increasing semantic and syntactic complexity.

Because of the deaf child's limited grasp of the semantic and syntactic features of English, reading from books often presents numerous difficulties. The so-called Sanders Reader was prepared by Alexander Graham

Bell in 1873 for use by a six-year-old deaf child because other suitable printed material was not available. There is still a good deal of dissatisfaction with current reading material primarily because of its uncontrolled presentation of syntactic structures. For example, Hargis, *et al.* (1973) tested the hypothesis that the direct discourse format, which is frequently found in beginning basal reading series, contributes to the reading difficulty experienced by hearing-impaired children at the first-grade reading level. To test the hypothesis they selected randomly stories of about 500 words long-conversational and nonconversational—from a popular reading series. Students from the Tennessee School for the Deaf who were reading at first-grade level were selected randomly and then randomly assigned to the conversational and non-conversational stories. Results revealed a statistically significant difference in achievement favoring the group using the nonconversational stories. Hargis (1970) believes the solution may lie in the use of specially prepared readers which control syntactical structures, and idiomatic and figurative elements as well as vocabulary. N. and J. Peters (1973) have compiled an annotated listing of materials in reading and other curriculum areas which were selected for their relative ease. The teacher may also find an earlier compilation of Spache (1960) to be helpful in locating suitable printed material.

The natural language competence which we rightfully ascribe to most native-speaking children cannot be assumed present in the hearing-impaired child. Instead, the hearing-impaired child usually arrives at school with a serious language deficit. A slow, deliberate and carefully designed instructional program can help to reduce this language deficiency. A reading plan for the deaf is distinguished from a regular teaching program not by qualitative differences, but by quantitative ones. It is characterized by small, systematic and carefully planned increments in instruction, much review and reinforcement, and the use of materials which control the semantic and syntactic features of the language. But, like any good reading program, it is based on the child's oral language, it uses the child's interests as a source of material, it teaches skills functionally and in context, and it sees comprehension of meaning as the primary function of reading. The hearing-impaired child can learn to read along side the rest of the class.

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