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ABSTRACT

This guide is designed to assist regular classroom teachers in helping the hearing impaired child to master the English language. It is noted that the hearing impaired population is not homogenous. Different factors involved in the decision to place a hearing impaired child in a regular classroom are considered. The types of language problems hearing impaired children experience are enumerated, including problems with the function and structure of language. The need for a comprehensive assessment and the development of an individualized education program for hearing impaired children are highlighted. The assessment should include psychological, medical, audiological, and speech and language evaluations conducted by qualified professionals. Language programming at the elementary and secondary school levels is discussed with emphasis on the establishment of appropriate goals. It is concluded that whatever the reason for placing a hearing impaired student in a regular classroom, the task of helping that child move through the difficult process of mastering the English language is a great responsibility. (RW)

LANGUAGE IN EDUCATION:
Theory and Practice
54

Peter M. Blackwell

Teaching Hearing-Impaired Children in Regular Classrooms

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Sophia Behrens, Editor

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INTRODUCTION

The number of hearing-impaired children being educated in regular schools rather than in special schools for the deaf increased dramatically over the last decade. At first, this increase was due mainly to the large number of children whose mothers were affected by the Rubella epidemic of the 1960s, but more recently it has reflected the greater demand for services resulting from the obligations specified under the Education for the Handicapped Bill (P.L. 94-142).

This rapid growth has placed a considerable responsibility on regular classroom teachers who, though usually unfamiliar with hearing-impaired students, are now finding they have children with hearing difficulties in their classes. Furthermore, speech pathologists--in most cases the professionals directly responsible for the provision of support services to the child and regular teachers--often feel unprepared themselves to work with children who are much different from the population of speech-impaired children they generally serve. Even when teachers of the hearing impaired are available, they may be graduates of programs that have prepared them to work in schools for the deaf. Their training and experience often make it difficult for them to adjust to a situation that requires working with children for short periods of time and meeting goals that are set within the regular school context. These professionals may feel frustrated, guilty, and even overwhelmed by their responsibilities.

Although Ross (1977) observes that many hearing-impaired children are poorly served audiologically and have many other needs, the primary concerns expressed by people who provide services to these children are related to the areas of language assessment and programming.

Description of the Population

The population under discussion is by no means a homogeneous one. While the generic term "hearing impaired" is used to describe any child with any type of hearing loss, there are major differences between (1) the *deaf* child, who has been traditionally described as one whose residual hearing is insufficient to enable speech and language to develop through a purely auditory process, with or without amplification, and (2) the *hard-of-hearing* child, who processes speech and language auditorily, with visual cues. On the other hand, there are children who do not fit clearly into either of these categories and who must be carefully evaluated to determine their real needs and potential remediation.

Although there is considerable dispute among audiologists regarding the physiological separation between deaf and hard of hearing (Boothroyd 1976, Ross 1977), a hearing threshold level of 90-95 decibels is widely accepted as a meaningful standard. A more complete description of the population in terms of their audiological and general educational needs can be found in Ross et al. (1982), Birch (1975) or in Hein and Bishop's extensive bibliography (1978).

To assist the regular classroom teacher with the responsibility of helping the hearing-impaired child master what may be his or her greatest hurdle--the English language--it may be useful to discuss the reasons for placing hearing-impaired children in the regular classroom, their language needs, useful assessment procedures, and the setting of appropriate language goals.

I. THE HEARING-IMPAIRED CHILD IN THE REGULAR SCHOOL SETTING

The factors involved in the decision to place a hearing-impaired child in a regular classroom are many and varied, but their implications need to be understood, since they play a critical part in determining the kinds of programming that will be necessary.

Placement Related to Environmental Factors

Even if we include the hard-of-hearing population along with severely or profoundly deaf children, the incidence of hearing impairment is generally regarded to be three in a thousand schoolchildren. The fact that hearing impairment is a "low incidence" handicap partially explains why not many teachers are familiar with the problems involved. It is an area of special education that has not received priority or support commensurate with the seriousness of its effect.

The problems related to this "low incidence" become most obvious in the large rural areas of the U.S. While many of the more severely or profoundly deaf children may attend a residential school for the deaf that services an entire state or region, some parents are exercising their rights under the law and choosing to have their children educated in a community school system, at least in the child's early years.

In this type of placement, many of the educational decisions are made to provide the best kind of program in the available situation. Regardless of the amount of support provided, the child's progress may be slow, and the demands on the teacher's time, energy, and creativity extensive.

Two very important observations need to be made about such a situation. (1) Where there is no possibility for consistent or frequent support from a resource or itinerant teacher, the children should be evaluated by the best available assessment process in order to ensure that the regular classroom teacher can provide them with the most appropriate, useful, and effective activities.

At a workshop that I conducted in a large, rural Midwestern state, itinerant teachers of the hearing impaired shared their frustrations related to their daily tasks. Most of the teachers were responsible for a large geographical state or region. In a typical day, they might see a three-year-old child for 45 minutes in one school, drive 80 miles to see a nine-year-old for another 45 minutes, and then move on again.

Much of the dissatisfaction and a great deal of the guilt shared by these teachers related to their not knowing what to do in those 45-minute time periods with each child. The regular class teachers and the parents seemed to believe that those sessions would make the critical difference between success and failure for the child. While the itinerant teachers felt that a support process was important, they were only too aware that 45 minutes twice a week (or every day) would not really meet the child's needs.

A more effective use of the itinerant teacher's time under these circumstances might be to utilize the sessions for very careful assessment and monitoring of a developmental language sequence that could be accomplished through daily classroom activities rather than in the resource room.

(2) All participants in the teaching process need emotional support. If the regular classroom teacher is unsure of meeting the hearing-impaired child's needs, that teacher will need the constant support of the itinerant teacher. On the other hand, if visiting teachers feel that they alone are responsible for the children's success, or if there is concern about the effectiveness of the resource time, the itinerant teacher will be able to provide little support to the classroom teacher.

Programmatic Placement

The major difference between programmatic placement and the placement described above is that while in the latter the program is determined by the environment, the former is designed deliberately by the community to meet the needs of its hearing-impaired children.

Programmatic placement may involve a continuum of services, including self-contained classes; regular class placement with resource teacher help; or a combination of both.

Because programmatic placement assumes that the choice of placement is the result of careful deliberation among several possible programs, the regular classroom teacher should be able to anticipate considerable professional support. Moreover, this kind of program tends to occur in suburban communities, where it is possible to centralize some services.

Enrichment Placement

A further motivation for placement of a hearing-impaired child in a regular class is to provide an enrichment of language experience. The child may come from a self-contained class or school for the deaf, or it may have been determined through assessment by the special education staff that the child has mastered the basic skills of language development and needs exposure to a more complex language environment.

A major problem that often develops in this type of placement is that while educators of the hearing impaired may see the child's language as good--perhaps even superior to other hearing-impaired children--the regular classroom teacher may see the student's language as impoverished and fragile.

In fact, both may be right. The child may have language skills that are good for hearing-impaired children and that cannot be sufficiently enriched in a separate classroom with children whose language is developing more slowly. On the other hand, the distance between this child's language and the language of his or her hearing peers may still be very great.

Particular Placement

Other placements may include the student who, in spite of a severe or profound hearing loss, has progressed well through the educational process and needs minor adaptations to a regular program, or, on the other hand, the child who is placed in a class at the insistence of the parents over the objections of the professionals involved.

In all these cases, regardless of motivation, the success of the educational experience will depend to a very large extent on the quality of assessment and the clarity of programming goals established on the basis of that assessment.

II. LANGUAGE DEVELOPMENT OF THE HEARING-IMPAIRED CHILD

Although the first impression people may often have of hearing-impaired children is that their speech is strange or that they have an awkward way of communicating, the extent of their language difficulties comes as a greater shock to the regular classroom teacher, who may have to assume the major responsibility for their language education.

The types of language problems of hearing-impaired children, which are not usually seen in the linguistic productions of the other children in the class, will be a constant source of surprise, frustration, and worry to teachers and will test every bit of their creativity. If an adequate language support program is to be designed by classroom teachers, along with a resource teacher or speech therapist, it is important that the assumptions made about the children's language functioning be as accurate as possible. That is, one can look at their language primarily in terms of what is wrong with it or what seems to be missing from it, in which case the likely style of remediation will be to try to patch or shore it up. On the other hand, if a more careful look suggests that regardless of its obvious missing pieces or strange constructions, the language often makes sense semantically and the errors may even be systematic, then a program that capitalizes on those strengths will be more satisfying to both teachers and students.

It may be useful at this point to discuss the language development and functioning of hearing-impaired children in the light of some linguistic perspectives. Recent linguistic studies have shown us the importance of considering the *functions* of language as well as its *form*, or *structure*. In fact, one difficulty in assessing and planning for hearing-impaired children is that the structural problems in their language usage are so obvious that the issue of appropriateness of function has not been given due attention.

Functions and Forms of Language

Halliday (1974) identifies several different functions for language, among them the *ideational* function, which in the young child is related to the need to impose order on the environment, to name and classify it, and to define the child's own person in relation to it. The *interpersonal* function has to do with those processes that are involved in successful social interaction. As Keenan (1974) suggests, the young child is not only involved in the mastery of a linguistic code but also a code of conduct. At the preschool level, for instance, the child must learn appropriate and acceptable ways to ask for information, invite other children to play, tease, and request help. Studies by Berko-Gleason and Weintraub (1976) and others have shown that there is a significantly different process of development between what Berko-Gleason calls *reference* language and *routines*, or the language of social interaction. Parents and other adults provide a different kind of input and expect very different kinds of responses for each of these functions of language.

Halliday identifies a further function in language, which he calls *textual*, or that which seems to arise from the very nature of language itself. Textual issues include function words and inflected language forms and are intricately related to fluency. Problems in the textual nature of the language, seen often in the productions of non-native speakers of English or in the language of many hearing-impaired children, result in a quality of rigidity and unnaturalness.

It is possible that because the inflected forms and function words of the hearing-impaired child's language are often absent or limited, the child is judged to be poor in all areas of language. A more careful study might show that the child may have very complete ideas that are well expressed with appropriate vocabulary and word order but without plural endings or tense markers, or that the child may have appropriate social language but not do well with the language of ideas and learning. As a person becomes a more able user of the language, the interrelatedness of these functions becomes more evident.

As the child grows older, social interaction demands an increasing set of functions for language that range from the rules of games played at recess time to the ritual of ceremonies utilized in various institutions such as the church or Boy Scouts. The failure to master the nuances of these new functions means difficulties in adjusting to a situation as well as problems understanding the content of the interchange of language.

A relevant example of adjustment for the hearing-impaired child in the regular school is the complexity of the function and form of school language. In studying the language of the classroom, Richards (1978) asks the question, Bearing in mind the important context with regard to the choice of appropriate language, what are the demands made upon the language of the child in the school in general and in the learning situations associated with the different subjects of the curriculum?

Richards' research supports a perspective that there is indeed a difference between the language a child encounters in school, at home, and on the playground. It is very possible that a child may have developed fairly adequate skills in the area of interpersonal routines but cannot handle the newer "language of the classroom" with its own set of question forms and structures.

Problems in the Function of Language

Some of the problems hearing-impaired children have with the function of classroom language can be seen in the following language samples from a three-year-old with a fluctuating hearing loss, who is in a regular nursery school.

A. Interaction between teacher and Peter in a free-play situation

P: I gonna get a plate for you.
T: How about some milk, I'd like some milk.
P: Wait a minute.
P: We got cold coffee in there. You done? You done with your plate?
T: Yes, thank you.
P: You want some coffee?
T: Yes, please.
P: O.K.
T: Peter, ask him to help you.
P: Help me, Andrew.

B. Peter's spontaneous utterances in a free-play situation

P: Come on, tire, get bigger!
Uh oh, it's flat.
This thing won't get bigger.
Hey, look at this tire's going up.

T: What's this?
P: Cow.
What, pig?
Now get up there.
Oh no, you don't, cow.
This cow don't go in there.
This won't open up.
Come on, car, get going!
T: Where are you going?
P: I'm going to the gas station to get some gas.
You hear that air.

C. Classroom lesson interaction - story time

T: Where do you think he went?
P: Wait and see.
T: Where did he go?
P: At the store.
T: To the store.
T: How many bears were left, Peter?
P: One, two, three.
T: What's he doing?
P: He's sleeping at the couch.
T: Did they want to go to the park and play?
P: (Nods)
T: Did they? They said, 'No, let's go to the park and eat.'

These language samples suggest that in play situations, whether with the teacher or other children, there is considerable child-initiated language that is either a commentary on activities and items that are present, or interactive comments related to social situations such as serving and eating. The questions from the teacher are limited and related to situations arising from the play situation. In fact, in samples (A) and (B), Peter asks as many questions as the teacher. The teacher in (A) and (B) takes the comments of the child and encourages further elaboration. The child often responds to the regular class teacher's questions with a complete sentence and further comment.

In sample (C), however, the context shifts to a lesson situation and the language of both teacher and child changes accordingly. In this context, all language is initiated by the teacher. Questions are asked to check if the child understands what is happening in the story. The teacher corrects both the content and syntax of the child's production but does not push for elaboration either of knowledge or language. The child, on the other hand, gives a more restricted response specifically related to the question.

The point here is not to make a judgment about what is happening in the language situations but to indicate that in classroom teaching, there is a difference in the roles of the participants and their use of language from that of purely social interaction. There are different rules governing classroom discourse and everyday discourse; they apply from the very beginning of the school experience and become increasingly complex. What is critical to remember is that children must master this educational linguistic process if they are to be successful in school.

The problems that hearing-impaired children have with language are obviously much broader than a mastery of classroom interaction. There are problems that are directly related to the effects of the child's hearing impairment and that seem most evident in the following areas:

- Significant gaps in general knowledge
- Difficulty in the mastery of complex syntactic structures
- Absence or irregularity in the use of inflected forms and function words

As morphological and non-content information are usually unstressed in phonological production, it is not surprising that hearing-impaired students have difficulty in this area. Remediation will need to include good auditory training as well as language assistance.

It is also not surprising that hearing-impaired children show gaps in information. Unfortunately, as will be seen in the discussion of programming for hard-of-hearing students, it is not uncommon for these children to be in a situation that actually reduces the breadth of information input and increases the effect of the handicap.

Problems in the Structure of Language

Following are some written language samples from high school students, ages 16 to 18, with moderate hearing losses. They come from a variety of settings, from special education classes to regular high school classes (Blackwell and Engen 1976).

A. I see a boy play with a toy. he is play with a lot of toy in the with the class. he is a nice boy he go to South Haven in name of the school is Horgan.

B. a little boy was dreaming one night that he got up in the morning and ate breakfast. He got dress in his space uniform went in to his rocket, when he got on the moon, he made friends with the funny looking people.

C. he said his car broke down so I went to go back to bed and I got out of bed and I watch the TV about one hour so I went to bed and I got out the bed about 3:00 to eat.

D. The little boy is playing with his toys. He is playing House with them. He get up all the friture and dollup. Now he got the chair in his hand. And the doll in the other hand. First he get all the fricture up and then he fix the people up. And he got more toy in the box to set up.

In terms of the content, these samples are extremely immature for adolescent students. Sentences tend to "run on," and plural markers, tense suffixes, and prepositions are often omitted. Nevertheless, the meaning is clear and the combining of sentences follows an appropriate order.

These problems may not seem so great in themselves, but they are distressing to the teacher in the regular classroom and a puzzle for planning remedial activities.

While the reasons for the paucity of general knowledge may be obvious, the syntactic and morphological issues are not so clear. An inventory of syntactic structures in the high school language samples above suggests the following analysis:

Sample (A). Sentences are all simple and grammatically complete, although not always punctuated appropriately. Word order is intact.

Sample (B). Sentences are all either compound or complex, although not always punctuated appropriately. Subordinate clauses are used correctly.

Sample (C). One complete "run-on" sentence. Essentially simple sentences conjoined with *so* and *and*.

Sample (D). One conjoined sentence. Mainly unconnected simple sentences, though three sentences begin with conjunctions.

Hunt (1965), in his study of grammatical structures written at three grade levels, observes that "a fourth grader builds sentences better than he punctuates. Certain children simply do not use periods. Others write innumerable *and's* where an educated adult would have written periods; they underpunctuate." He further notes that *and* as well as *but* and *so* are coordinators that are used with greater frequency by fourth graders than older students. Hunt's study suggests that the language samples are somewhat typical of the writing productions of fourth-grade children.

Implications

The implication of this analysis, then, is that rather than considering these students and their language as "different," it might be more accurate to see them as sixteen-year-olds producing at a fourth-grade level. Not only in auditory processing but also in language, "the hard-of-hearing child is more like the normally hearing child than the deaf child" (Ross 1977), though linguistically delayed.

If this analysis is correct, then what are the major differences between the fourth-grade productions of these students and those that are appropriate for their age? One of the most significant differences between the writing of fourth graders and that of eighth or twelfth graders is that of *subordination*. As children get older, they write more subordinate clauses per main clause than do younger children. Although subordination appears late in children's writing productions, Limber (1973) suggests that it begins to appear in the oral productions of the three-year-old. By five, most hearing children are able to comprehend embedded subordinate clauses in initial, medial, and final position, whereas hearing-impaired children have difficulty comprehending the same structures as late as adolescence (Engen and Engen 1982).

What seems to be happening is that hard-of-hearing children develop fairly adequate interpersonal linguistic skills related to the h the neighborhood. As their experience becomes more ins al (school, church, clubs, games with rules, etc.), difficulty in identifying the appropriate code develops. For some reason, there are problems mastering complexity at the subordinate clause level.

Bloom et al. (1980) suggest that the acquisition of complex sentences involves learning the *form*, or the syntactic structure; the *content*, that is, the semantic relations between propositions; and *use*. What seems to be critical here is that as the semantic relationships of time or causation are being explored by the child--often in discourse with an adult--the appropriate syntactic form is being provided. If for any reason this interaction is interrupted, linguistic delay is probable.

According to Ingram (1982), another source for complex language is the stories that are read to children. Fairy tales, children's classics, and other stories that are read over and over again contain numerous coordinated and subordinated structures. Snow (1981) observes that the influence of books on the acquisition of syntax in children is critically related to the interaction between adult and child in the reading process. Lack of experience in being read to can further explain why hard-of-hearing children may develop adequate semantic relationships but not the syntactic structures appropriate to describe them.

Tyack (1981) states that "such terms as 'auditory deficits' and 'poor auditory memory,' while correct, do not pinpoint sufficiently the nature of some children's linguistic deficits. A close look at specific syntactic and semantic features of what the children say and understand makes possible individualized and effective remedial programs."

The issues of the severely or profoundly deaf child in the regular classroom are both more complex and more controversial. Among the many factors to be considered are how well the child uses residual hearing with amplification, what the primary source of linguistic input is, and what form it takes.

If the severely to profoundly deaf child is to be successful in the regular classroom, the functional and structural linguistic skills related to social interaction and referencing the world must be mastered. However, the chance for mismatch between ideas and language form is greater.

Below are some general observations regarding the oral and written language of deaf children:

- There are significant gaps in general knowledge evident in the language of many deaf children.

- Inflected forms and function words are often missing from their English language production.

- Syntactic development is adequate for the level of a simple sentence grammar. "Run-on" sentences appear later in the language of deaf children, and fewer coordinators are used when items are strung together.

- By the time deaf children reach adolescence, their ability to handle semantic relationships is often greater than their ability to cope with English syntax, and this results in productions that appear confused. A typical production from a deaf student might be:

  I go Vermont hunt swim my friends.

Although the above sentence may be judged as "poor language," the fact is that semantic ability is at a complex level but syntactic ability is not. The principle here is that the more complex the language attempted, the more profound problems there are. Until the student's syntactic competence is brought to a level where he or she can express complex ideas adequately and appropriately, a successful mainstream experience in English classes is out of the question.

III. ASSESSMENT

The process of developing a program for hearing-impaired children, whether they are placed in a regular classroom or not, involves a comprehensive assessment and the development of an individualized educational plan (commonly called an IEP). The assessment should include psychological, medical, audiological, and speech and language evaluations conducted by qualified professionals.

The content of the speech and language assessment will often vary according to the training and experience of the person responsible. In the regular school setting, the language evaluations are usually conducted by speech pathologists or speech and language therapists. Unfortunately, the demands of the IEP process encourage evaluators to be overly concerned about scores or other quantitative figures that can be used as a basis for determining placement or progress.

In reality, age norms in language assessment are essentially meaningless. While something is known about the order in which language is acquired, very little is understood about the rate of acquisition. Consequently, statements such as "This child has a language age of 3.2 years" provide very little insight as to the child's real functioning and no information upon which a language program can be developed. According to Engen and Engen (in press),

> Many of the popular language tests do not provide a sound rationale for the particular domain of language being tested or for how that particular test may relate to language development as a whole. In the development of test items, too, many tests present items which are either too general in nature or of insufficient depth and number to provide satisfactory assessment. This limitation, coupled frequently with inadequate standardization, may mean

> that the test cannot be reliably used either as a norm-referenced measure or as a criterion-referenced measure. In addition, the majority of language tests cannot be used for special populations, and clinicians are therefore often faced with computing scores, such as 'language ages,' . . . which are relatively meaningless, as they are typically based on 'normal' children.

The Engens report that three of the most widely used language tests are the Peabody Picture Vocabulary Test (Dunn 1965), the Carrow Test of Auditory Comprehension (1973), and the Illinois Test of Psycholinguistic Abilities (ITPA) (Kirk, McCarthy and Kirk 1968).

The Peabody, they observe, is an empirically based test that is not based on a theory of language except an assumption that vocabulary reflects language development, a perspective questioned by Dale (1976).

The Carrow assesses a wider range of language, beginning with lexical items and including a number of morphological items and simple sentences. It does not present a balanced selection of items, however, which severely limits its use in educational planning.

The ITPA is a very different test. aiming to assess the processes of reception, association, and expression. The test was based on a model of language proposed by Osgood in 1957, a model of language now considered to be outdated.

In the case of the older student, tests such as the Test of Syntactic Abilities (TSA) (Quigley et al. 1978) or the Rhode Island Test of Language Structures (Engen and Engen in press) may be administered. While these are more useful in the information they provide, it must be remembered that they are not comprehensive in their assessment, but rather provide pieces of data that need to be combined with other material for the development of an appropriate evaluation. The TSA is a pencil-and-paper test, which means that the student's real language competence may be obscured by reading and writing difficulties.

None of these tests, nor any others that I am aware of, assess the child's language ability in the areas of pragmatics or semantics.

Blackwell et al. (1978) suggest that the following issues should be considered in a comprehensive language assessment of hearing-impaired children:

Assessment of Comprehension

It may be useful to try to determine some major linguistic milestones or landmarks that will give some idea of where the child is in the developmental process as well as identify what the next stage might be.

For instance, the elicited language data may provide a series of two-word sentences such as

Father home.
Sally sick,
Nothing school,
Want juice,
John far away, or
Mary paint.

This child, then, has a basic grammar that can be described in the following paradigm,

NP	V	X
Father		home
Sally		sick
	Nothing	school
	Want	juice
John		far away
Mary	paint,	

in which any two of the simple grammatical relationships NP, V, or any other items occur in the child's production. The grammatical nature of this language is supported by the consistent use of correct word order. This small sample includes the semantic relationships of actor-action. actor-state, location, and negation.

What is suggested here is that although there are few useful formal language assessment tools for the hearing impaired, a meaningful evaluation can be made through analyzing the child's comprehension of various linguistic criteria in an informal way.

Assessment of Production

The assessment of production should include a sampling of a child's spontaneous language production, either with a parent, if the child is young; or with peers, teacher, or tester, if the child is of school age. (See Miller [1981] for a useful outline for collecting spontaneous language samples in a language assessment process.)

While the information gained from spontaneous sampling provides very useful information, it will not necessarily indicate if the child is able to produce some very specific syntactic structures. To accomplish this, the person doing the assessment will need to identify the types of sentences to be tested and obtain pictures that will encourage elicitation of those particular sentence types.

Engen (1979) developed the Rhode Island Sentence Elicitation Task to elicit simple sentences, negatives, datives, passives, adverbials, and relative clauses. Speech pathologists in several school communities have indicated that they find this a particularly useful tool for assessing children in their programs.

IV. EDUCATIONAL PROGRAMMING-- PRESCHOOL LEVEL

The preschool age child is perhaps the most likely of all hearing-impaired children to be placed in a regular classroom setting. This seems reasonable, as the language and educational demands are not great at this level, the program is often a play group, and young children seem to be very accepting of one another. Furthermore, the hope that the hearing-impaired child's speech will be helped by (1) the need to communicate with other children and (2) the availability of good speech models encourages parents who are still struggling with the realities of their child's hearing loss.

While these issues are essentially true, the needs of the hearing-impaired child must be carefully defined and met if the child is to be successful in this setting.

The establishment of a clearly defined set of expectations and careful implementation and monitoring are imperative at this early level to ensure that by the time the child enters kindergarten or grade one, the language development process is well under way.

Too often, unfortunately, the preschool placement for the hearing-impaired child is regarded as a "trial" situation, where the experience of interaction might encourage the development of appropriate speech and language. However, the child, the parents, and the professionals involved do not have the privilege of a trial-and-error process. Not only has the child already lost two or three years of linguistic development by this age, but a set of critical skills that will serve as a basis for later language functioning must be established as early as possible. It is safe to say that the longer the delay in starting language development, the greater the deficit and the less hopeful the prognosis for successful achievement in the later years.

The regular class teacher, therefore, needs to resist adamantly the encouragement to accept a hearing-impaired child in the classroom merely for the "social experience."

Language Inventory

Detailed language assessment material will usually be minimal for the child entering preschool, since formal tests are not very productive at this age. The teacher should be very suspicious if presented with language age levels or vocabulary counts.

The most useful process of evaluation at this level is an inventory of the kinds of linguistic competencies that are appropriate for preschool age children. This can best be accomplished in the class situation, where the teacher can observe the child's behavior over a period of time. It may be useful if the teacher thinks in terms of the child's knowledge and use of the *function* and *form* of language as separate categories when designing the inventory.

An effective inventory for use with very young hearing-impaired children has been developed by Topol and Engen (1979) to collect the following data:

A. Overview

1. Can/cannot maintain joint attention
2. Behavioral orientation
   - Object/objects orientation only
   - Person/persons orientation only
   - Integrated person-object orientation
3. Use of vocalization
   - Non-communicative/frequent vs. occasional
   - Interactive/within turns/frequent vs. occasional
   - With intent
   - On demand
4. Use of gesture as signal
   - Natural-expressive/frequent vs. occasional
   - Home signs-referential/frequent vs. occasional
   - Mostly imitative

5. Can/cannot engage in joint activity

B. Assessment of Prelinguistic Behavior

1. Ability to engage others in communication
2. Ability to engage in communicative routine
3. Function of communication
4. Form of reference
5. Ability to respond/comprehend adult initiations
6. Discourse
7. Quality of communication
8. Ability to participate in formal language assessment

It is not at all unusual for children at this age to produce very little connected language. This should not, however, be regarded as a measure of comprehension level. The teacher needs to check whether in a relatively unambiguous situation, the child can respond appropriately to simple sentences.

For instance, when shown two pictures in which an item is "big" in one and "little" in the other (a very common topic in the preschool), the child might be able to point to the picture in response to "The house is big" or "The house is little."

Using Halliday's (1974) categories of language, the preschool language program can focus on interpersonal or social language, or the language associated with the "code of conduct," and ideational language, which describes the growing set of semantic relationships the child is observing.

Language Programming

As the teacher observes an interaction between the hearing-impaired child and a classmate, he or she should provide a model of the linguistic interchange.

Help me, please!
Thank you.
Do you want a cookie?
Come and play, Billy!

It may be useful not only for the hearing-impaired child, but for all the children in the class to use stories to identify the language of request, interchange, rejection, and invitation.

The popular story of Chicken Little, for instance, repeats the same pattern for all the meetings in the story:

. . . and then he met Henny Penny.
'Where are you going, Chicken Little?'
'The sky is falling, and I must go and tell the King.'
'May I come, too?' asked Henny Penny.
'Yes, you may,' replied Chicken Little.
And they went along until they met Ducky Daddles. . . .

Another useful story is the Little Red Hen.

'Who will help me grind the wheat?'
'Not I!' said the dog.
'Not I!' said the cat.
'Not I!' said the pig.
'Then I will do it myself!' said the Little Red Hen.

When my own son was preschool age, although he was not hearing impaired, he struggled a great deal with both the phonology and the content of language interaction. People just didn't understand what he said, and he wasn't comfortable with many interactive situations.

At night, when he was in bed, he rehearsed many of the dialogue passages from stories such as The Three Little Pigs and Chicken Little and made up imaginative situations of his own. He repeated them again and again, with high, low, gruff, kind, or pleading voices.

If it is necessary for *all* children to gradually learn what to say and how to say it, how much more hearing-impaired children will need in terms of exposure and practice!

In the case of ideational language, the hearing-impaired child will need very specific help in putting together basic structures. Vocabulary development will be important, but not sufficient in itself.

If one looks at the semantic relationships of the simple sentences of English, one can see that the categories match many of the items in the preschool curriculum.

Grammatical Structure	Semantic Structure
NP VP: Bugs crawl.	Actor Action
NP V NP: Cows eat grass.	Actor Action Object
NP Be Adj: Bugs are tiny.	Attribute
NP Be NP: Bugs are insects	Category
NP Be Adv: This bug is in the tree.	Location/space/time

The teacher will need to provide specific simple sentences for the hearing-impaired child and to repeat them more often, but the language should be that which is being used in the daily classroom experience. For this reason, it is preferable for the classroom teacher to suggest the content of the activities that the support teacher is conducting during tutoring sessions, rather than the other way around.

A common procedure is to take hearing-impaired children out for tutoring or speech therapy during story time or singing, on the assumption that it is too difficult for them to understand stories or to participate in the singing of nursery rhymes. This is, of course, a self-fulfilling prophecy. If children never participate in an activity, they will never learn what is happening at that time.

A good rule is not to take hearing-impaired children out of *any* language activity, but rather to use the tutoring time to provide them with the skills necessary to participate in the activities. It may be necessary, for instance, for the speech therapist to help the children with the words of the songs or rhymes, so that they can then bring that knowledge to the group situation.

The reading of stories to children is already highly ritualized by the time they are in preschool. From a very early age they have learned that there are times when they are involved in an interactive process among an adult, a book, and themselves. They have learned to respond to predictability, sequence of events, characters, questioning, and plot structure. Hearing-impaired children may not have had the same experience. While the other children are expanding on their earlier experiences, they are learning the ritualization of story telling for the first time. Hearing-impaired children, then, need *more* story-time experience rather than less.

IEP Writing: A Sample Case

The following example is of a preschool-age hearing-impaired child who was placed in a regular classroom setting in Rhode Island. Although his hearing impairment was severe, his audiogram was essentially flat, suggesting that he had good residual hearing. His speech at the time of placement was unintelligible, and he did not respond to verbalizations that were not accompanied by gesture.

The diagnostic linguist from the Rhode Island School for the Deaf evaluated the child and reported:

> Although it was not possible to do any formal testing at this point, there are several significant observations that can be made.
>
> Billy's responsiveness to sound and his evident understanding of the function of utterance types is evidence that he has some functional hearing to be utilized in an educational program. Further evidence of this is the good voice quality of his few vocalizations. . . .
>
> The organization of Billy's play and what he reveals about his knowledge of the world show a good potential for learning, although it is not clear what kind of school skills he has at this stage.

The IEP that was developed for Billy indicated that the professionals who were involved with him in the regular classroom had little understanding of the nature of language and language acquisition.

> Expressive language: Billy will be able to name 20 nouns and meanings.
>
> Implementation: Billy will be able to verbalize 20 nouns and use them correctly in isolation. Nouns will be selected from the Peabody Picture Kit.
>
> Receptive language: Billy will be able to develop 50 percent of vocabulary words from pictures when pointed to by the teacher.

Implementation: Billy will be able to point to 50 percent of the pictures in the Peabody Picture Kit. He will follow a two-part command.

More appropriate goals and activities for Billy might have included the following items:

Goals

A. Interpersonal

1. Billy will demonstrate his competence in the area of interpersonal language by

    (a) appropriately responding to commands, questions, compliments, requests, and invitations when presented by the classroom teacher;

    (b) appropriately responding to commands, questions, compliments, invitations, requests, and insults when presented by peers;

    (c) appropriately initiating commands, questions, compliments, invitations, and requests to teacher and peers.

2. Billy will participate in three interactive nursery rhymes with peers.

3. Billy will participate in story time and will demonstrate his knowledge of the sequence of three stories by successfully ordering a set of pictures.

B. Ideational

1. Billy will demonstrate comprehension of simple sentences involving the semantic concepts of state, action, attribute, categories, and location by successfully identifying pictures when presented with a complete simple sentence.

2. Billy will produce simple two- or three-word productions with appropriate word order when presented with topics taught in classroom situations.

Activities

1. The support teacher and the classroom teacher will identify a small set of greetings, commands, compliments, requests, and invitations to be used as demonstrations.

   If possible, the support teacher will demonstrate and role-play the presentation and response of the identified structures. The classroom teacher will use these structures in the appropriate situation.

   If no support teacher is available, the classroom teacher will demonstrate the various structures, role-playing with the children in the class, including Billy.

2. When Billy is in various interactive situations, the teacher will provide the appropriate linguistic form of the request, command, etc., encouraging his productions. Production difficulties will be noted for speech therapy time.

3. Nursery rhymes such as One, Two, Buckle My Shoe will be introduced, using an interactive process where the teacher or a child says the first line, a second child responds with the second line, and so on.

   This should enable Billy to begin with the counting lines (one, two; three, four; etc.) and move to the responding line when ready. The speech therapist will support this activity.

4. The content activities will be introduced with a heavy reliance on three-dimensional objects or pictures. The teacher will present major ideas to Billy in basic simple sentences in the context of the lesson. For example, if the lesson is on insects, considerable give and take will be occurring. The teacher will specifically identify the insects under discussion. using appropriate sentences.

   > See, Billy, this is a bug.
   > And this is a bug.
   > What's this?
   > A bug, that's right.

This material will be reinforced by the support teacher or speech therapist in tutoring sessions.

V. LANGUAGE PROGRAMMING--
ELEMENTARY SCHOOL LEVEL

The language focus of the elementary school shifts from the social and ideational goals of the preschool to the ideational and textual aspects of language. The orientation of the elementary classes is almost totally "educational," and success is measured in terms of mastering a very prescribed set of academic skills.

The hearing-impaired child may need some help in the unfamiliar functional and pragmatic areas of language in elementary school. The child will also need to recognize that a major source of information on behavior now comes not from peers or stories, or even parents, but from the classroom teacher. Without that information, the hearing-impaired child may repeatedly violate some highly regarded procedures of classroom behavior, seriously jeopardizing his or her placement.

Recent studies of classroom language have drawn attention to the subtle complexities of the dynamics of teacher-child interaction. Clearly established procedures are introduced and reinforced through often repeated exhortations such as

Are we all paying attention?
Let's sit up straight!
This is very important!
I want you to remember this.
Billy!
Are you watching, Sally?

The semantically appropriate two- or three-word language productions that were applauded enthusiastically by teachers and parents at the preschool level will not be sufficient at the elementary school level. What the regular classroom teacher needs to understand is that the hearing-impaired child's disfluent and incomplete language does not need to be patched up but developed and enriched.

Language Goals

There are two major language goals for the child in the elementary grades:

(1). To move from simple ideational sentences to simple sentences containing appropriate textual items such as inflections, prepositions, and determiners. Unfortunately, these items are not only unstressed in sentence production but have poor acoustic saliency, so that the hearing-impaired child is not likely to acquire these items in the normal language activity of the classroom. Even if the services of a sign language interpreter are being utilized, many of these textual items will not be used by the interpreter unless he or she is specifically asked to do so. The support teacher, then, should include this material in the tutoring and the auditory and speech-training sessions.

(2). To move as quickly as possible from a simple-sentence to a complex level of functioning, progressing through conjoining, subordination, movement, and deletion. Almost all standard basal reader series, for instance, utilize complex syntactic structures by the end of grade two. Vocabulary training alone will not help the student be an independent reader if his or her comprehension of syntax remains at a simple-sentence level.

As syntactic ability is not something that is usually measured in the language development of hearing children, classroom teachers may need help in identifying the major linguistic processes that should be considered in programming. If there is no staff member available who can assist in this area, literature on the acquisition of syntax in children may be the most useful source.[1] The linguistics department of a local university should also be able to provide a helpful bibliography.

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[1] See, e.g., R. Brown, C. Cazden and U. Bellugi, *The Child's Grammar from I to III* (Minneapolis: University of Minnesota Press, 1968); D. Slobin, Cognitive prerequisites for the development of grammar, in C. Ferguson and D. Slobin, eds., *Studies of Child Language Development* (New York: Holt, Rinehart and Winston, 1971).

Productive Language

The most difficult process in language development at this level seems to be the jump from simple--or even conjoined --sentences to more complex subordinated structures. According to Hunt (1965). this shift happens in the written productions of all students. The hearing-impaired student may need help in moving from one level to the next.

Olson (1982) observes, "If the child cannot understand certain structures in oral language, he or she is going to have formidable difficulties in handling them in reading and writing."

A very common symptom of the need for help is continued use of simple sentences conjoined with *and* or *but* in productive writing. It is my opinion that there is an element of safety in this kind of production. There is no complex transformation of language required. Simple sentences are strung together with a conjunction. One hearing-impaired student in a regular class placement recently produced an eighty-word "conjoined" sentence.

One reason for the difficulty in acquiring these kinds of structures is that they are not too common in verbal interaction. Verbal accounts of what happened yesterday can very easily utilize conjoined sequenced sentences. In written language, however, subordination is needed if the production is not to appear immature.

A similar type of language also appears in what might be called "the schedule." It is not unusual in the elementary grades for students to be required to keep daily journals. In this kind of production, the student lists very specifically what happened over a period of time. The sentences will still be simple, for example:

> At 6:00 p.m. we had supper.
> At 6:30 p.m. my father watched the news. At 7:00 p.m.
> I played a game with my brother
> At 8:00 p.m. we watched "The Incredible Hulk" on T.V.
> At 9:00 p.m. I went to bed.

These sentences are certainly not incorrect. They not only meet the letter of the assignment but are syntactically correct as well. However, they are rigid and limited in semantic content.

If students are shown that "At _____ p.m." can be said in a variety of other ways, e.g., "After supper," "Later," "Before I went to bed," even if they need to start by producing the schedule, they can then experiment with a variety of ways in which to relate it.

Receptive Language

The later elementary school grades often involve the use of textbooks. The hearing-impaired student may need some special help here.

The first area of assistance might be in the understanding of the structure of texts. The teacher should make sure that the student knows the form of the text as well as the content. Does the child know there is a table of contents or an index? Are the strategies used for finding information efficient?

Textbooks seem to have their own linguistic style. The use of the passive voice is common--a structure that Engen and Engen (in press) show is one of the most difficult structures for hearing-impaired students. Sentences containing movement and deletion operations, such as those below, appear frequently in textbooks:

> The discovery of America by Columbus
> was the beginning of a new era.
>
> The Northeast was controlled by
> England, and the West by Mexico.

Engen and Engen suggest that sentences that deviate from a strict subject-verb-object order, such as topicalized or nominalized sentences or those that contain medial relative clauses or are in the passive voice, are very difficult for hearing-impaired children to comprehend. Merely understanding the vocabulary will not enable the student to use texts competently and independently--a critical factor when one considers that if hearing-impaired students are to go very far in secondary or post-secondary education, they will need to rely heavily on texts to supplement the material provided in the classroom.

IEP Writing

IEP statements should focus on the development of linguistic skills that not only keep the student on the same level as classmates, but that will serve as a foundation for the secondary school experience.

Early Elementary Grades

A. Student will demonstrate comprehension of the following:

- The simple sentence level
- A level of conjoined sentences
- Subordination using adverbial clauses as measured by formal assessment (The Rhode Island Test of Language Structures [1983] or the Test of Syntactic Abilities [Quigley 1978]).

B. Student will demonstrate recognition of the above syntactic elements when used in the basal reader series.

C. Student will demonstrate mastery of providing alternative constituents in a given sentence as measured by the successful completion of assignments.

Later Elementary Grades

A. Student will demonstrate comprehension of the following syntactic elements in sentences:

- Relative clauses in medial and final position
- Passive voice
- Relative clauses with deleted pronouns
- Other forms of deletion
- Nominalization
- Topicalization as measured by formal tests of language comprehension.

B. Student will demonstrate recognition of the above syntactic structures when occurring in classroom textbooks.

VI. LANGUAGE PROGRAMMING--SECONDARY SCHOOL LEVEL

The secondary level is by far the most difficult level for the hearing-impaired student. Statistics on the relationship between hearing losses and dropping out of school are sparse, but the correlation is believed to be far greater than previously assumed.

The adjustments of adolescence, peer pressure, multiple teachers, rotating classes, specific class periods, new testing procedures, and an educational institution not well designed to meet the needs of a special education population--all these factors tend to make the chances of success for the severely or even moderately hearing-handicapped student tenuous indeed.

There will most likely be pressure from within the school to move the student as soon as possible into a vocationally oriented program or even a "life skills" program. Guidance counselors will generally encourage the student to avoid academically oriented subjects.

Critically important at this level is the need for one person to serve as the contact for the student as well as for all the classroom teachers involved. This must be a person who is in the school full time. If the support teacher is an itinerant teacher who may visit once a week or so, then a regular teacher or counselor on the staff should be appointed as "trouble shooter," so that problems can be handled immediately.

Planning for the student in the secondary school should begin with a group session of all the subject teachers who will have the student in their class. Teachers should be made aware, however, that regardless of the subject matter being taught, the language is a shared responsibility. The student may handle the concepts of the subject well but fail because of the way in which questions are framed, the use of unfamiliar language that is specific to the subject matter, or the way in which a textbook is designed.

One science teacher expressed to me his frustration over the fact that a hearing-impaired student in his class failed an exam, even though it became apparent from later questioning that the student understood the material. An item analysis of the test showed that if the test question began with a WH-word and ended with a question mark, the student tended to get it right. If the WH-question was embedded in the sentence, the student was inconsistent in his answers. If the item was in the imperative form, e.g.. "Find the . . .," "Discuss . . .," or "Find . . .," either at the beginning of or embedded in the statement, the student always gave the wrong answer.

Not only does test taking itself require a definite set of linguistic skills, but each subject is presented with its own linguistic forms. Help in recognizing the variety of forms will be a useful support activity.

It is impossible, however, to anticipate the range of problems that can occur in students' experiences at the secondary level. For example, a hearing-impaired student with excellent basic language skills, who is in the mainstream program of the Rhode Island School for the Deaf, on his first day in an English class in a New England prep school was presented with the following essay topic as a homework assignment:

> Leonard Bernstein has been called the "Pied Piper" of Carnegie Hall. Discuss this.

By the time the student met with his tutor he had already looked up material about Bernstein and started his essay. However, he had never heard the story of the Pied Piper of Hamelin. Without that association, he would never be able to fulfill the assignment successfully.

For the tutor to check all homework assignments to see if there are gaps is not the most appropriate way to meet the needs of this student. The tutor must set up strategies by which students can identify their own deficits in knowledge and indicate where the appropriate information is available.

A hearing-impaired student in the Rhode Island program was having difficulty understanding a passage from a short story. The teacher, in cooperation with a support person from the school for the deaf outreach service, assessed the situation from a number of perspectives. Was it the vocabulary? Was it the syntax? Was there some information in the passage that the student was lacking? Eventually the teacher realized that the passage was a long description of a setting that was essential to the understanding of the whole story. This student had an assumption that written language was narrative: something happened. In the opening paragraphs of this piece, nothing happened. The student was looking for something that wasn't there and consequently having difficulty understanding the story as a whole.

IEP Writing

The development of the IEP for the secondary-level student requires a realistic assessment of the needs of the student, on the one hand, and the requirements of the subject on the other.

If, for instance, the IEP goals for the literature class state:

> The student will read, and complete a book review for, the following books:
>
> - *The Hobbit*
> - *The Odyssey*,

the support teacher may feel obligated to summarize or even rewrite the novel into simpler language. There will probably be an attempt to have the student check new vocabulary in the dictionary--an enormous and discouraging task when one considers the nature of the book list.

If the book list is beyond the reading level of the student, the support teacher or classroom teacher might find it more effective to identify a plot structure that can be used as a framework for discussing each book.

For *The Hobbit*, for instance, the basic structure might be described as

- Assignment of the task or problem
- A set of problems to overcome
- Fulfillment of the task or solving the problem

A set of questions, such as the following, might be asked:

- What is the task set in the story? (The student should read these particular pages without rewrite.)
- What were the problems encountered on the journey? (These pages might be assigned for reading.)
- Who solved the problem in each situation?

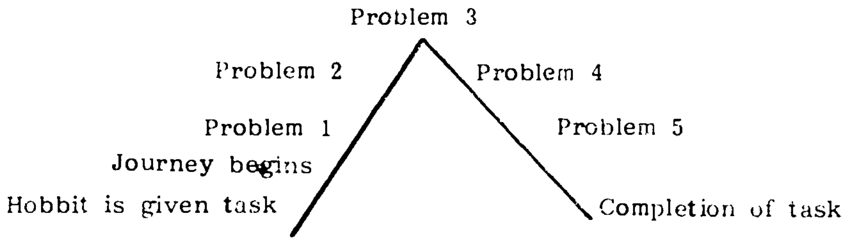
The value of this approach is that it can be used for many different stories of this genre. It can also provide a basis for writing a report that requires a comparison among the books, and a similar method can be used to discuss character roles in the stories.

The major benefit of this kind of help is that it provides a strategy for the student to participate actively in the reading process and provides a possibility for generating new and more effective approaches to problem solving.

The IEP goals in the above case might be stated as follows:

> The student will be able to demonstrate comprehension of the essential plot of *The Hobbit* and *The Odyssey* by identifying the appropriate events on a graphic representation of the plot.

(An example of this type of graphic representation appears below.)



CONCLUSION

Whatever the reason for placing a hearing-impaired student in a regular classroom, the task of helping that child move through the very difficult process of mastering the English language is a great responsibility.

In reality, perhaps, that responsibility can never be carried by one person alone. The audiologist must make sure the student's hearing aids are of good quality and work properly. The teacher of the hearing impaired, the speech therapist, or the resource teacher will need to provide sufficient tutoring, skill building, auditory training, speech training, and counseling. The responsibility of the language teaching itself must truly be seen as a shared task.

Too often classroom teachers willingly, but with great hesitation, accept the hearing-impaired student's presence in the class, believing that because they are unfamiliar with the implications of a hearing loss, the real work will be done by the itinerant support staff.

While this is partly true, regular classroom teachers must see themselves as a much more critical influence in the language development process. More language issues will be observed and dealt with in daily class activities than in any tutoring session.

Furthermore, while classroom teachers may not know much about deafness, they probably know a great deal about the nature of language or the structure of content matter and how they must be learned. That kind of information is invaluable in the educational goal-setting process.

A good evaluation of the student is essential if an appropriate program is to be developed. Regular classroom teachers, through their observations and insights as to how the hearing-impaired student functions in a variety of learning situations, can provide some of the most useful diagnostic information available.

One of the most important characters in literature is the mentor. Merlin and Gandalf, or Charlotte in *Charlotte's Web*, contribute wisdom, guidance, and real instruction to the struggling hero, often at great sacrifice to themselves. Hearing-impaired children need mentors on their journey as well. What better place to find them than in the classroom, where teachers can help students develop their real potential in the long and complex educational process.

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