

Development of Communication Individualized Educational Programs (CIEP) for Deaf Secondary-Level Students

Donald D. Johnson

Frank Caccamise

National Technical Institute for the Deaf

Nancy J. Kadunc

Ohio State University

The concept of individualized or personalized education is discussed in relation to Public Law 94-142 (P.L. 94-142), the Education for all Handicapped Children Act passed by congress in 1975. This law, among other assurances, provides for individualization of student educational programs and emphasizes the involvement of parents in the development of the individualized educational program (IEP). The importance of the development of Communication Individualized Educational Programs (CIEP) for all deaf students is emphasized. Communication assessment instruments appropriate for identifying deaf secondary-level students in need of communication skills development are discussed. Sample CIEPs based on student performance on these test instruments are provided.

The Congress found in 1975 that more than half of this nation's eight million handicapped children do not receive appropriate educational services (DuBow, 1977).

The Need for Individualized Educational Programs (IEP)

In 1975, Congress passed the Education for All Handicapped Children Act (P.L. 94-142) in order to ensure equal educational opportunities for all children. The Act is intended to fulfill the following four purposes: (a) to assure that all handicapped children have available to them a free, appropriate education which emphasizes special education and related services designed to meet their unique needs; (b) to assure that the rights of handicapped children and their parents or guardians are protected; (c) to help states and localities pay for education of all handicapped children; and (d) to assure and assess the effectiveness of educational programs.

One of the key underlying principles of P.L. 94-142 is the requirement imposed on all educational programs to provide a free, individualized educational program (IEP) designed to meet the unique needs of each handicapped child. Johnson (1976, 1978) has described the concept of individualized or personalized instruction as it relates to the development of communication skills within a young adult deaf population. Personalized education was defined by Carroll (1975) as “. . . an attempt to achieve a balance between the characteristics of the learner and the learning environment. It is a match of the learning environment with the learner's information, processing strategies, concepts, learning sets, motivational systems achieved, and skills required. It is a continuous process.” Noar (1972) has emphasized that individualized instruction can no longer be considered a luxury. “Because of the great number of people to be taught, the great variety in their backgrounds, and finally, the necessity to provide instruction when the learner needs it, the traditional classroom model will have to be replaced. The learner must be able to begin when the need occurs and at the place and pace most appropriate for him.”

A second important principle related to individualization of a student's educational program concerns the involvement of both parents and student in the development of the IEP. This involvement provides important input for educators and helps both parents and the student to understand the skills and needs of the student. In turn, this input and understanding can lead to better IEP development, improved parent support, and increased student motivation.

It is because of realization on the part of Congress of the important role that parents can play in the educational program planning process that P.L. 94-142 mandates parental participation during the development of an individualized education plan (Yoshida & Gottlieb, 1977).

Recognizing the Importance of Communication Skill Development for Deaf Persons

The importance of various modes of receptive and expressive communication skill development for all deaf people is inherent in the following few paragraphs:

Since communication is a process which involves the whole human person, and since communication is fundamental to normal human development, *it becomes priority number one*. Deaf children achieve, learn, contribute and succeed on the basis of their ability to interact meaningfully with other persons in the environment and with the environment itself. To put it succinctly, communication involves people interacting freely with people. If we can accept this premise, then it becomes apparent to us that indeed we have a crisis in communication in the education of deaf children. Far too many educational programs endorse and employ restrictive modes of

communication which reduce the quality of child-child interaction to an almost primitive level (Denton, 1971).

Denton (1970) has recognized the importance of the right of every deaf child to learn to use all forms of communication "... in order that he may have full opportunity to develop language competence at the earliest possible age. This implies the introduction of a reliable receptive-expressive symbol system in the preschool years between the ages of one and five." Recognition of the importance of early intervention in the development of English language and other communication skills is not new to educational programs for hearing-impaired persons throughout the United States and other countries. For example, Nickerson (1975) in his report concerned with deaf persons states that "... it seems generally acknowledged that the longer a child goes without auditory stimulation, the more resistant to corrective action his language difficulties will be." Moreover, Nickerson corroborates the concept espoused by Denton (1970) concerning the need to employ multiple modes of communication with the deaf of all ages in conjunction with their language development. He stated that "... the lack of both hearing and speech is such a severe handicap in our society that the acquisition of speech competence is worth a considerable effort. To take this position, it is not necessary to disparage manual communication nor endorse the idea that speech should be taught to the exclusion of signing." However, to insure appropriate interaction and program planning for the deaf of all age levels, Caccamise (1978) stressed "... students entering fields related to deafness ... need to be challenged to understand how to best interact with people who have learned and have the potential to learn to use their visual and manual skills at a level of proficiency and sophistication that we are now just beginning to understand. At the same time we must continue to maintain our appreciation and increase our understanding of oral-aural communication and its role (alone and in combination with sign language) in the lives of deaf, hard-of-hearing, and hearing persons."

Although deaf educators are apparently aware of the communication development needs of the deaf, Johnson, Levitt, McPherson, Subtelny, Blasdell, and Crandall (1978) expressed the concern "... that there are currently weaknesses inherent in the elementary and secondary programs which have been providing communication instruction for deaf students. These weaknesses are probably in large part due to the fact that there are not presently in existence appropriate test instruments to evaluate and describe the communication strengths and/or weaknesses of deaf children and adults. Until such instruments exist in a standardized format at all chronological age (CA) levels, the task of student program individualization cannot be accomplished."

Standardization of Assessment Techniques for Development of Communication Individualized Educational Programs (CIEP)

In order to develop a CIEP for a deaf person, it is essential to study all aspects of her/his communication performance including English reading and writing skills, oral/aural skills (speech, speechreading, and listening), sign skills (manual codes for English and American Sign Language), and simultaneous communication skills (use of spoken and sign English together). This is necessary in order to identify both the communication strengths and weaknesses of each deaf person. However, many of the needed communication performance assessment instruments are either nonexistent or inappropriate for deaf clients of various chronological age (CA) levels. This fact has recently been documented by a special task force interested in nationwide standardization of methodologies for assessment of communication performance levels of deaf persons. This task force, the Communication Performance Profile Extension Task Force, was made up of representatives from six (and later nine) major institutions providing services for deaf students/clients. These representatives developed a set of guidelines (Johnson et al., 1978) for selection of test instruments to be included in a standard communication assessment battery.

At the conclusion of this effort, an in-depth study was made to identify those existing assessment instruments that met the criteria specified in the guidelines for inclusion within a standardized test battery for deaf students CA 5-9, 10-14, and 15+ years. The results of this study demonstrated that appropriate test instruments for measurement of various types of communication performance of the deaf are virtually nonexistent for all three age ranges stated above. Although few test instruments currently in existence meet all the criteria specified by the task force, some existing tests were identified that could, with revisions, meet the established criteria for one or more age ranges (see Table 1 in the Introduction to Johnson, Walter, Crandall, McPherson, Subtelny, Levitt, Caccamise, & Davis [Eds.], 1980). The task force has currently entered the test selection/revision/development phase of its overall effort.

A communication performance test battery that includes eight components has been developed at the National Technical Institute for the Deaf (NTID). The six receptive and two expressive communication parameters measured by the test battery, together with the test instruments utilized, are listed in Table 1.

This battery of tests has been successfully used for assessing student communication skill levels at NTID since 1972 (Johnson, 1975, 1976). As stipulated in the guidelines specified in *The Test Selection and Development Manual* (Johnson et al., 1978), the raw scores derived from administration of each test can be converted very easily to a rating on a five-point (1 to 5) rating scale. Each rating has a simple functional descriptor for ease of interpretation

Table 1
 Eight Receptive and Expressive Communication Parameters Included in
 the NTID Communication Profile and Their Corresponding Test Instruments

Profile Parameter	Test Instrument
Receptive Tests:	
1. Hearing (Speech) Discrimination	10 Selected Spondee Words & NTID audiocassette versions of CID Everyday Speech Sentences
2. Speechreading Without Sound	NTID filmed versions of CID Everyday Speech Sentences
3. Speechreading With Sound	(Same as Item 2)
4. Manual Reception	(Same as Item 2)
5. Simultaneous Reception	(Same as Item 2)
6. English Reading Comprehension	California Reading Test: Junior High Level, WXYZ Series, 1963 Norms (Tiegs & Clark, 1967) ¹
Expressive Tests:	
1. Writing Intelligibility	NTID videotaped versions of Mr. Koumal Film Series developed by SIM Corporation
2. Speech Intelligibility	Audiotapes of students reading the Rainbow Passage (Fairbanks, 1960)

¹See footnote 1 concerning use of the SAT with secondary-level students.

to students, faculty, and parents.

Table 2 lists each of the five ratings and their matching functional descriptors. The descriptors for writing intelligibility have been altered by Crandall (1977), but the rating scales and descriptors for all profile parameters are essentially the same (i.e., a student with a scale score rating of 5 for a receptive or expressive communication mode receives or expresses all of the information with no difficulty; a student with a 3 rating, with great difficulty, expresses or receives approximately half of the information; and for a student with a rating of 1, no communication takes place).

The raw score ranges for conversion to a factor on the five-point rating scale have been discussed by Johnson and Kadunc (1980) along with various precautions which should be exercised when making such a conversion. These screening procedures for profiling a student's communication skills have been

Table 2
Rating System and Corresponding Functional Descriptors Utilized by
NTID for Defining Student Receptive and Expressive Communication Skills

Profile Rating	Functional Descriptor
5	Under optimum conditions, the complete content of the message is received or expressed with no difficulty.
4	Under optimum conditions, most, but not all, of the content of the message is received or expressed with little difficulty.
3	Under optimum conditions, with great difficulty, only about half of the message is received or expressed appropriately.
2	Under optimum conditions, only an occasional word or phrase is received or expressed appropriately. Essentially, no communication occurs.
1	Under optimum conditions, the content of the message is neither received nor understood. No communication takes place.

Note. The content in the areas of hearing discrimination, speechreading, and manual and simultaneous reception is always derived from simple everyday social discourse and not related to the technical vocabulary utilized in the academic environment.

found to be helpful for: (a) rapid identification of students in need of communication skills development; (b) explaining an individual student's communication strengths and weakness not only to the student but to faculty, staff, and parents as well; (c) use in developing CIEPs for students; (d) language and communication program management (defining personnel, equipment, and space needs); and (e) studying trends within student populations.

Usefulness of the NTID Communication Profile for Evaluation and Program Planning for Deaf Secondary-Level Students

In 1978 seven of the battery of eight NTID communication profile test instruments (excluding the California Reading Test)¹ were field-tested with

¹It had been determined in advance of the field testing that the *California Reading Test (CRT): Junior High Level, WXYZ Series, 1963 Norms* (Tiegs & Clark, 1967), which is utilized at NTID to measure English reading comprehension skill levels, would be too difficult for the secondary-level deaf students to be tested. The Paragraph Meaning Sub-test of the *Stanford Achievement Test (SAT)* (Madden & Gardner, 1973) was selected in lieu of the CRT as a measure of English Reading Comprehension. The SAT is administered annually to all secondary-level students at both schools.

420 secondary-level students (CA 13.6 to 21.5 years) at two residential schools for the deaf. This figure represented the entire population of secondary-level students who were then enrolled at the two schools. The purpose of the field testing was to determine the usefulness of this battery of receptive and expressive communication screening instruments for identifying students in need of communication skills development.

The results of the combined data from the two field tests of secondary-level deaf students have been reported by Johnson and Kadunc (1980). The following information summarizes the findings in that report:

1. The average communication skill performance levels of both field-test populations for all test parameters were found to be similar, allowing the data from the two schools to be combined.

2. Students in the three chronological age (CA) levels tested (CA 14, 15, and 16+ years) performed at approximately the same levels for all tests; i.e., there were no significant differences in students' test performance among the three CA levels tested.

3. The average scores for the combined data for each CA level from the two field-test sites were compared to scores for students entering NTID between 1974-1978 (N=1000+).² The average scores for all tests were significantly lower for the field-test students except in the case of the manual receptive test on which they were found to be comparable to entering NTID students.

4. Using the Paragraph Meaning Sub-test of the Stanford Achievement Test (Madden & Gardner, 1973) as the measure of English reading comprehension, the average grade-level equivalent (GLE) for the field-test population was 4.03. The average GLE for entering NTID students (1974-1978) was 8.1.

5. For the field-test students, the average hearing loss for the better ear was approximately 94 dB HL (Re: 1969 ANSI) with hearing throughout the frequency range to approximately 3500 Hz. Entering NTID students generally have an average hearing loss of 93 dB HL (Re: 1969 ANSI) with hearing throughout the frequency range to approximately 3500 Hz.

6. Age-of-onset data were not available from both secondary school test sites; but for the one test site where data were available, approximately 91% of the population (N=135) were thought to be deaf at birth with all but one of the remainder of the students deaf by CA 3 years.

7. The average CA for beginning use of amplification for the combined field-test population was approximately 6 years.

²Average NTID student scores for receiving information through the simultaneous receptive mode (signs/fingerspelling, listening, and speechreading) were significantly better than those of the combined field-test population. They were also significantly better than their average scores for the manual reception task. This information was interpreted to mean that NTID students tended to use multiple modes of information reception while the field-test population derived most of their information through the manual receptive mode (Johnson & Kadunc, 1980).

Final recommendations based on field-test results and a comparison of these results to those of entering NTID students were: (a) the entire NTID test battery (excluding the California Reading Test) is appropriate for use with deaf students at the secondary level; (b) the Paragraph Meaning Sub-test of the Stanford Achievement Test should be used in lieu of the California Reading Test as the measure of English Reading Comprehension; (c) if the recommended test battery is used with deaf students at the secondary level, it should be used as a screening battery to identify student communication development needs for *initial* program planning (additional diagnostic test instruments should be used for determining appropriate instructional strategies for each of the communication skills which are in need of strengthening/development); and (d) earlier and constant use of amplification with auditory and speechreading training is needed.

Recognizing the Need for Development of Communication Individualized Educational Programs (CIEP) for all Deaf Students

As stated in an earlier section of this paper, Noar (1972) and Carroll (1975) have stressed the importance of developing IEPs for all students. They emphasized the development of IEPs with respect to the student's total academic program. There are many types of receptive and expressive communication skills, however, in need of strengthening/development within deaf student populations. Thus, it is essential that a Communication Individualized Education Program (CIEP) be developed for each deaf student. Parents/guardians, speech-language pathologists, audiologists, sign language/simultaneous communication specialists, English reading and writing specialists, instructional faculty, school counselors, and the student need to work together as a team during the development and approval of the CIEP and throughout the instructional and post-instructional evaluation process. Periodic program evaluations with CIEP revision (when necessary) are also important elements to the entire process.

Table 3 illustrates the importance of communication assessments and development of student CIEPs. Ten students were selected from the population participating in the 1978 communication field testing. The profile ratings (and in the case of English reading comprehension, grade level equivalents since there is currently no formula for converting SAT scores to a five-point rating scale) are shown for six receptive and two expressive communication parameters. As evidenced in this table, there is great variation present among the general communication skill levels of these ten students. It is because of this variation that individualized instructional program plans are essential. The next section of this paper provides examples of student CIEPs based on these students' performance results on communication tests.

Table 3
Performance Ratings for Receptive and Expressive Communication Parameters
of Ten Deaf Secondary-Level Students Participating in a 1978 Field Test

Profile Parameters	Student Number									
	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
RECEPTIVE SKILLS										
1. Hearing Discrimination	2	2	2	4	2	3	2	4	1	1
2. Speechreading Without Sound	2	2	3	3	2	4	2	4	3	1
3. Speechreading With Sound	1	2	2	5	1	5	2	5	2	1
4. Manual Reception	3	4	5	4	5	5	5	5	5	2
5. Simultaneous Reception	2	4	5	5	4	5	4	5	5	2
6. Reading Comprehension ¹	2.2	2.9	5.0	6.9	6.1	6.5	5.4	7.2	2.7	1.9
EXPRESSIVE SKILLS										
1. Writing Intelligibility	1	3	3	4	3	3	3	4	3	1
2. Speech Intelligibility	1	2	2	5	1	5	1	4	2	1

¹Stanford Achievement Test (SAT) Paragraph Meaning Sub-test scores are reported in grade level equivalents since current scoring protocol does not permit conversion to a profile rating for secondary-level deaf students.

COMMUNICATION PROGRAM PLANNING

General

As stated previously, the five-point NTID Communication Profile rating system is utilized at NTID to assist in the development of CIEPs for its postsecondary, deaf student population. These CIEPs undergo revision on a periodic and/or aperiodic basis according to progress, or lack thereof, of the students. The Communication Assessment and Advising Department within the Communication Program is responsible for developing student program plans. Within this Department, speech-language pathologists, English specialists, audiologists, and specialists in sign language/simultaneous communication work together in a team approach to program planning. This team of communication specialists consults regularly with each student's career and personal counselors, as well as faculty and staff within the

student's major career area, to assist in identifying student needs. Special diagnostic tests are used for more in-depth examination of student problems if it has been determined through communication performance screening assessment instruments that a student has receptive or expressive skills that need development.

Additional supplemental information pertinent to various student characteristics is also felt to be supportive in development of the student CIEPs. Audiological information such as pure-tone thresholds and averages, high frequency cutoffs, age of onset of hearing loss, etiology, hearing aid usage history, preferred mode(s) of communication, student motivation for communication development, etc., are all helpful in determining student potentials, skills, and needs.

In the following section the above kinds of data and information will be examined for the purpose of developing CIEPs for three students based on projected needs. Areas of receptive and expressive communication skill strength and weakness are discussed generally, and recommendations are made for the development of specific communication skill areas. It must be remembered that personal acquaintance with the student is important in developing the final program plan.

At NTID entering students are required to participate in a communication course ("Introduction to Communication") during the NTID Summer career sampling program. This course orients the student to the NTID communication program, instruction in interpretation of communication profile test results, and provides each student information and an opportunity to discuss her/his communication skills and needs. Thus, the students are usually well prepared to interact with the communication team members in the development of their formal CIEP. This, or a similar approach, should be successful at the secondary level.

Communication Program Planning and Rationales for Student 1 (S1)

Student 1 General Information. Table 4 demonstrates the scores of three field-test students including S1. The first student, S1, is an 18-year-old male. Audiological and other data obtained from student records indicate that he has been deaf since birth but did not begin wearing amplification until CA 7 years. He had been wearing his hearing aid for 11 years at the time of the field test. He has a great deal of hearing in both ears with a pure-tone average for the right ear of 82 dB HL and for the left ear of 87 dB HL. He has hearing throughout the entire frequency range from 125 to 8000 Hz for both ears.

S1 Hearing Discrimination Information. According to the Moore formula (1975), persons with the amount of hearing potential of S1, under optimum listening conditions, should be able to discriminate 90-100% of the information in CID Everyday Speech Sentences with amplification. However, this student obviously has not learned to benefit optimally from

Table 4
Performance Ratings and Raw Score Data for Receptive and Expressive Communication Parameters of Three Students (Obtained during October 1978 Field Testing)

Profile Parameters	Student Number					
	S1 (CA-18)		S2 (CA-14)		S3 (CA-16)	
	Profile Rating	Raw Score	Profile Rating	Raw Score	Profile Rating	Raw Score
RECEPTIVE SKILLS	(DOB: 1-31-61)		(DOB: 9-21-64)		(DOB: 5-9-62)	
1. Hearing Discrimination (Better Ear)	2	0%	3	11%	3	43%
- Pure-tone Average (Better Ear)	-	82 dB	-	82 dB	-	82 dB
- Hearing Aid Use Profile	4	-	4	-	4	-
- Cutoff Frequency (Better Ear)	-	8000 Hz	-	8000 Hz	-	8000 Hz
- Age at HL Onset	-	Birth	-	Birth	-	Birth
- Age Began Using HA	-	7 yrs.	-	3 yrs.	-	6 yrs.
2. Speechreading (No Sound)	2	21%	3	34%	4	63%
3. Speechreading (With Sound)	3	36%	3	48%	5	84%
4. Manual Reception	4	70%	4	64%	5	84%
5. Simultaneous Reception	4	70%	4	66%	5	96%
6. Reading Comprehension (SAT) Date of Test	-	4.0 GLE (Sept. 1978)	-	3.0 GLE (Sept. 1978)	-	7.0 GLE (Sept. 1978)
EXPRESSIVE SKILLS						
1. Speech Intelligibility	3	3.1 Aver	4	3.6 Aver	5	4.6 Aver
2. Writing Intelligibility	3	6.71 Raw	3	5.43 Raw	3	6.82 Raw

Key: S = Student; CA = Chronological Age; DOB = Date of Birth; GLE = Grade Level Equivalent; Aver = Averaged Rating; Raw = Raw Score; SAT = Stanford Achievement Test (Paragraph Meaning Sub-Test).

amplification since he received a profile rating of 2 which indicates that he can only use frequency, intensity, and other sound cues to tell that two words are the same or different; i.e., cowboy-hotdog = different, and cowboy-cowboy = same.

He cannot identify words in everyday social-type discourse although he was rated a 4 for hearing aid usage which means that he supposedly uses his hearing aid from 5-8 hours per day. Delayed use of amplification (CA 7 years), lack of previous formal auditory training, and poor English skills, including reading comprehension and vocabulary, etc., may all be factors contributing to his inability to function properly with amplification.

S1 Speechreading Without and With Sound Information. A speechreading without sound rating of 2 (raw score of 21% on the CID Everyday Speech Sentences) indicates that he is also in need of a formal speechreading training program. However, his speechreading ability appears to improve slightly (from 21% to 36%) when sound is added during the speechreading process.

S1 Speech Intelligibility Information. This student has achieved semi-intelligible levels of speech with a raw score profile rating of 3.1 and could probably improve his speech rapidly to intelligible levels after or in conjunction with auditory training to learn to better monitor his own speech and voice. Work on articulation skills in speech therapy also tends to improve speechreading skills; and if speech profile ratings are better than the person's corresponding speechreading rating, which is true in this case, he is a good candidate for speechreading training (Subtelny & Walter, 1975).

S1 English Skill Information. Scores from the Paragraph Meaning Subtest of the SAT place this student at the 4.0 grade level for reading comprehension. His raw score for writing intelligibility was 6.71, or a corresponding profile rating of 3. Writing errors, according to the detailed information contained within Table 4, indicate that his writing sample would probably reflect the types of errors which would generally fall into the functor, derivation, and inflection categories (Crandall, 1977).

S1 Manual and Simultaneous Reception Information. Table 4 demonstrates that this student has achieved good skills at receiving information through the manual receptive mode as evidenced by a 70% raw score (profile rating of 4) for the test of manual reception. This score indicates not only that the test materials were not too difficult but also supports the contention that he is probably using primarily his manual receptive skills during the test for simultaneous receptive ability. His score for the simultaneous reception test matches exactly his manual reception score (70%). (See also S1's performance on speechreading with sound.)

S1 Program Design and Rationale. Any program designed to enhance the communication skills of a deaf student should take into consideration or be based on a program designed to develop English skills. Without a strong program of English skill development, it is doubtful that low achievers in English will develop and/or strengthen their oral/aural and simultaneous communication skills. The English specialists should work very closely with the audiologists, speech pathologist, and manual/simultaneous instructors in the design of a totally integrated program in which vocabulary and structure in all parts of the communication program match and build upon the student's English achievement levels. The content instructors in math, basic science, and the social sciences should also work as members of the team to supply content information geared to types of experiences in which the student is currently engaged. Conceptually this is quite important from the standpoint of motivation of any student involved in communication

development.

Although an attempt has been made to design the following general communication development program for S1 in programmatic order, it must be remembered that some of these skill-building efforts should take place simultaneously. Also, the program needs to be examined periodically to determine its appropriateness. In all cases the chronological age and readiness level must be taken into consideration. A suggested CIEP for S1 is presented in Table 5.

Table 5
Communication Individualized Education Program
(CIEP) Designed for Subject 1 (S1)

General Program Area	General Needs
English	Reading Comprehension Vocabulary Development Writing Improvement Inflection errors Function Errors Derivation Errors
Audition	Hearing Aid Check (HAC) Earmold Check (EMC) Hearing Aid Orientation Basic Auditory Training (perhaps combined with speechreading training) Advanced Auditory Training TTY Training and Telephone Training? ¹
Speechreading	Basic Speechreading (probably a combined approach with auditory training) Intermediate Speechreading Advanced Speechreading (possibly combined with speech therapy)
Speech	Individual Speech Therapy (emphasis on continued development of listening and speechreading skills) Speech Refinement Interpersonal Communication? ¹ Public Speaking
Manual/Simultaneous	Probably No Need Unless Requested or for Technical Signs in Career Area

¹Recommendations are sometimes questionable since they are dependent on student needs and/or progress after acquaintance with the student.

Communication Program Planning and Rationales for Student 2 (S2)

Student 2 General Information. Student 2, a 14-year-old male, has a hearing loss configuration which is similar to the first student discussed. His average hearing loss for the right ear is 82 dB HL and that for the left ear is 93 dB HL. He has hearing in the right ear from 125 to 8000 Hz. The hearing cutoff frequency for the left ear is 4000 Hz so that even that ear would hear many of the sounds in everyday speech if amplified. He apparently lost his hearing at birth and has been wearing a hearing aid since CA 3 years. Thus, at the time of the field test, he had been wearing amplification for approximately 11 years.

S2 Hearing Discrimination Information. This student manages slightly better with his amplification than the first student. He is able to discriminate some speech sounds and obtained a profile rating of 3 with 11% discrimination ability on the CID Everyday Speech Sentences. However, again, according to the Moore formula (1975), he needs an individualized, formal auditory training program to reach his potential of 90-100% hearing discrimination ability. His English skill levels are poorer than those of the first student, and that fact plus the need for auditory training may be variables limiting his ability.

S2 Speechreading Without and With Sound Information. Despite his poor English skills (GLE of 3.0 for reading comprehension), he was able to achieve fair scores on the tests of speechreading without (38%) and with sound (48%). It appears that there may be some contribution from sound during the speechreading process.

S2 Speech Intelligibility Information. Speech is generally intelligible with a profile rating of 4 (raw score rating of 3.6). This student would be an excellent candidate for individual speech therapy after and in conjunction with formal auditory training. Since his speech intelligibility rating is better than his speechreading rating, he is also an excellent candidate for speechreading. These two parameters of communication should be comparable according to Subtelny and Walter (1975). Probably in early attempts at formal speechreading training, a combined auditory/speechreading approach should be utilized.

S2 Manual and Simultaneous Reception Information. This student appears to be another case where the manual mode of information reception is highly contributory to the primary mode of information reception judging from the highly comparable manual (64%) and simultaneous (66%) reception scores. However, it is difficult to judge how much sound is contributing to the overall simultaneous reception process. His scores would probably improve after a formal effort to develop his English vocabulary, comprehension, and writing skills.

S2 English Skill Information. As already mentioned, this student received an English reading comprehension GLE score of 3.0 on the Paragraph

Meaning Subtest of the SAT which is indicative of severe limitations in his understanding of written materials. This score supports the contention that low English skills may be depressing his reception of English through all modes of communication tested. His writing intelligibility of 5.43 renders him a profile rating of 3; and he is probably in need of formal work on specific English skills such as functors, derivations, inflections, and vocabulary (Crandall, 1977). Since this student is only CA 14 years, he has more time left in his program to work on communication skills development than does S1.

S2 Program Design and Rationale. Again the program design should be based on a strong program of English skills development. Program ordering should be based on the specific needs of the student. The CIEP program listed in Table 6 is one possible appropriate approach for S2's development of communication skills.

Table 6
Communication Individualized Education Program
(CIEP) Designed for Subject 2 (S2)

General Program Area	General Needs
English	Same as for S1 plus work on contentive errors in development of writing skills
Audition	Same as for S1 (except for possible addition of telephone training depending on progress)
Speechreading	Same as for S1
Speech	Same as for S1
Manual/Simultaneous	Same as for S1

Communication Program Planning and Rationales for Student 3 (S3)

Student 3 General Information. The third student, a 16-year-old female, is also apparently deaf from birth. She began using amplification at CA 6 years according to school records. She has a hearing loss configuration almost exactly comparable to the first student described. The pure-tone average for the right ear is 82 dB HL and that for the left ear is 85 dB HL. She has hearing throughout the frequency range from 125 to 8000 Hz in both ears. As will be seen, however, her use of all receptive skills is dramatically different from the first two students described.

S3 Hearing Discrimination Information. Hearing discrimination ability for the better ear was 43% (profile rating of 3, almost 4). Although there were some 6 years between the advent of the hearing loss and the time she began

using amplification, this student either had the advantage of formal auditory training, is one of those rare persons who inherently learns to make good use of their amplification (Johnson, 1974), or a combination of both. This does not mean that there is not room for improvement since persons with her hearing characteristics should be performing at the 90-100% level on the CID Everyday Speech Sentences according to the Moore formula (1975). However, deaf persons who have developed their hearing skills to the levels achieved by this student often function more like hard-of-hearing students and make more progress on other communication skills development. She has been wearing her hearing aid on an average of 5 to 8 hours per day for approximately 10 years. She is a good candidate for a course in telephone usage.

S3 Speechreading Without and With Sound Information. This student has developed good speechreading skills without sound (raw score of 63% with a profile rating of 4) under optimum conditions. It is apparent that sound makes a contribution to the speechreading process. On the test of speechreading with sound, she improved her score to 84% (profile rating of 5). She should experience little difficulty communicating in a one-to-one communication situation when speech is the primary mode of communication.

S3 Speech Intelligibility Information. Speech intelligibility is excellent with a raw score rating of 4.6 (profile rating of 5). She has a few minor speech distortions and is in need of speech refinement. She would experience little difficulty communicating with the general public when speech is her primary mode of information expression.

S3 Manual and Simultaneous Reception Information. This student is an excellent example of the contention that the use of sign language and finger-spelling do not impede development of oral/aural skills provided that the learning environment is appropriate and the motivation is present. Not only does she have good-to-excellent oral/aural receptive skills, but she scored 84% on the test of manual reception and 96% (both profile ratings of 5) on the test of simultaneous reception. Again, these scores support the contention that when both oral/aural and manual/simultaneous skills are properly developed, the student will use a combination of receptive communication skills to receive and process information. Each of S3's communication skills (hearing, speechreading, manual/sign) are supportive in her reception of information.

S3 English Skill Information. This student received a 7.0 GLE on the Paragraph Meaning Sub-test of the SAT which, together with her other scores, makes her a good candidate for a postsecondary level education program providing she continues to progress with her English skills development and is motivated toward continuing her education. Her writing intelligibility score was 6.82 (profile rating of 3) which indicates that she, like

the first student, needs work on the general categories of English inflection, derivation, and functor skills (Crandall, 1977).

S3 Program Design and Rationale. The program design for this student is distinctly different from the two students formerly discussed. However, as indicated earlier, since she has some problems with English skills, the total program should be integrated and include simultaneous intervention in the areas of oral/aural and English skill development. Again, program ordering should be based on the specific needs of the student. A suggested CIEP for S3 is listed in Table 7.

Table 7
Communication Individualized Education Program
(CIEP) Designed for Subject 3 (S3)

General Program Area	General Needs
English	Reading Comprehension Vocabulary Development Writing Improvement Functor Errors Derivation Errors Inflection Errors
Audition	Hearing Aid Check (HAC) Earmold Check (EMC) Advanced Auditory Training Telephone Training (and TTY)
Speechreading	Advanced Speechreading (perhaps combined with individual or small group speech refinement with some emphasis on career vocabulary)
Speech	Speech Refinement (in conjunction with practice in self-monitoring) Interpersonal Communication? ¹ Public Speaking
Manual/Simultaneous	Probably No Need Unless Technical Signs for Career Area

¹Recommendations are sometimes questionable since they are dependent on student needs and/or progress after acquaintance with the student.

SUMMARY AND CONCLUSIONS

The Congressional mandate (P.L. 94-142) for individualized educational programs (IEP) for all handicapped children as a means of assuring that all these children receive appropriate educational services has been discussed. Also, the importance of having both parent and child involved in the IEP development process was emphasized.

The importance of communication skills development for deaf students and current weaknesses in elementary and secondary programs in the communication instruction for deaf students has been stressed.

Next, a special task force involved in developing guidelines for standardization of a battery of screening instruments for identifying deaf students in need of receptive and expressive communication skills development was discussed. The implications for utilizing such a battery of instruments as a basis for developing Communication Individualized Educational Programs (CIEP) for deaf students were suggested. The work at the National Technical Institute for the Deaf (NTID) on initial development of such a battery of screening instruments, including six tests for measuring receptive and two tests for measuring expressive communication skills, was presented. The need for development of a battery of communication assessment instruments for screening deaf students of all CA levels was identified.

Field testing at two residential schools for the deaf demonstrated that the existing components of the NTID portion of the extended communication performance profile can be used successfully with deaf secondary, as well as postsecondary level students, for identifying communication strengths and/or weaknesses. Sample cases/students were discussed in order to demonstrate how to utilize the information derived from administration of this test battery, together with related supplementary information, to design CIEPs for deaf secondary-level students.

Recommendations included: (a) earlier remedial auditory intervention; (b) parental counseling concerning the need to begin using multiple modes of communication as soon as the hearing loss is discovered; (c) a team approach in parent instruction to work with the child at home; (d) development and periodic revision of student CIEPs; (e) design of all communication programs around English skill development; (f) use of content from academic and social environments during communication instruction; and (g) a team approach in program development and instruction which includes audiologists, speech-language pathologists, English specialists, manual/simultaneous language instructors, content instructors, parent counselors, and the parents and child.

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