Recommendations for a preparatory English language program for hearing-impaired college students

Marguerite Re
University of Nevada, Las Vegas

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Recommendations for a preparatory English language program for hearing-impaired college students

Re, Marguerite, Ed.D.

University of Nevada, Las Vegas, 1990

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RECOMMENDATIONS FOR A PREPARATORY
ENGLISH LANGUAGE PROGRAM
FOR HEARING-IMPAIRED
COLLEGE STUDENTS

by
Marguerite Re

A dissertation submitted in partial fulfillment of the
requirement for the degree of

Doctor of Education

in
Postsecondary Education
Department of Secondary, Postsecondary
and Vocational Education

University of Nevada, Las Vegas
May, 1990
The dissertation of Marguerite Re for the degree of Ed.D. in Postsecondary Education is approved.

Chairperson, John M. Vergiels, Ph.D.

Examiner Committee Member, Martha W. Young, Ph.D.

Examiner Committee Member, James B. Case, Ph.D.

Graduate Faculty Representative, L. Arlen Collier, Ph.D.

Graduate Dean, Ronald W. Smith, Ph.D.

University of Nevada, Las Vegas

May, 1990
So deep is this silence
that the insects, the birds,
the talk of the neighbors in the distance,
the whir of the traffic, the music
are only its voices
and do not contradict it.

Vassar Miller

Then the eyes of the blind shall be opened,
and the ears of the deaf shall be unstopped.

Isaiah
ABSTRACT

The purpose of this research was to develop recommendations for a preparatory English language program for hearing-impaired college students for Clark County Community College, Las Vegas, Nevada, and other concerned colleges that do not presently offer such a program. A questionnaire designed to elicit program information regarding the goals and objectives, instructional practices and procedures, assessment and evaluation, and major problems and solutions was developed. The questionnaire was sent to directors of current preparatory hearing-impaired English language programs in two-year, liberal arts colleges.

An analysis of the data received revealed a good deal of diversity as well as considerable similarity in the goals and objectives, practices and procedures, and problems and solutions of the 35 responding programs. A synthesis and discussion of the data considered the relative merits and deterrents, advantages and disadvantages of current program goals and objectives, practices and procedures. Based on these considerations, recommendations for a preparatory English language program for hearing-impaired college students were presented.
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ACKNOWLEDGMENTS

I would like to express the utmost appreciation to my Advisor, Dr. John Vergiels, and to my Examining Committee, Dr. James Case, Dr. Arlen Collier, and especially Dr. Martha Young for her knowledgeable guidance through the uncharted terrain of linguistic theory. I greatly appreciate the time and critical commentary of Saundra Rust in the developing and refining of the survey instrument. In addition, I would like to thank Dr. Jim Machinsky for his suggestions regarding the interpretation and reporting of the data collected in this study. Countless thanks go to Dr. Bill Campbell for his skillful and invaluable computer graphics assistance, without which Chapter 3 would not have materialized as it did.

Sincere thanks are due Gene Nelson and Melba Johnson of Clark County Community College's Learning Assistance Center, without whose kindness, patience, and expertise the literature review presented in Chapter 2 would not have been accomplished. Also deserving of much gratitude is Katie Black, Coordinator of Interpreting Services at Clark County Community College, for her insight into the unique problems of deaf college students. Likewise, I appreciate tremendously the timely and cheerful assistance of Vonnie,
Marilyn, and Emilie, the angels of the Postsecondary Education Department at UNLV.

Special thanks go to Mr. George Johnson for his suggestions and constructive criticism; and very special thanks go to Dr. Harriet Gagliano, a caring friend and an exceptional person, for her unwavering support and belief in this project. Finally, I would like to thank Mr. George Benson and Mrs. Mary Re for their understanding and acceptance of the exigencies of scholarly endeavor.
CHAPTER 1

PURPOSE AND ORGANIZATION

Introduction

Acquiring knowledge, attaining a satisfying career, and living a fulfilling life are aspirations dearly held by most human beings. The ability to communicate meaningfully and effectively in the language of one's society is intrinsic to the achievement of these highly esteemed goals. Full knowledge and acceptance of the meaning of deafness in terms of communication difficulties is basic to understanding deafness, educationally as well as humanely. Despite the critical nature of this fact, most people have only a vague concept of the implications of the communication difficulties of deafness in psychological, social, and vocational terms. If deaf people spent their entire lives in cloister instead of facing the issues of survival in a hearing world, such gaps in knowledge and understanding would not be so destructive. However, deaf people do not desire a life of dependency, nor are clinics, schools, and other institutions anxious to provide lifelong shelter. Consequently, in a communication-rich society, the deaf pay a costly toll for the lack of understanding of the essence of their disability.
Historically, as early study after early study indicates, education has not fulfilled its responsibilities to deaf students and their families. One such early study by Schein and Bushnag found that admissions of deaf youth into college were only one-tenth the percent of the admissions to college of hearing students (McKay, 1977).

More recently, however, many new postsecondary programs have emerged for hearing-impaired students planning to continue their education beyond high school. The specific focus of public federal laws (the Rehabilitation Act of 1973, the Education For All Handicapped Children Act of 1975, and the Carl Perkins Vocational Education Act) has led to an increase in the number of postsecondary educational institutions offering special programs to hearing-impaired students (Woodrick and Petty, 1988).

In 1988, Gallaudet University and the National Technical Institute for the Deaf identified more than 150 postsecondary educational programs in the United States that serve hearing-impaired students (College & Career Programs for Deaf Students). An unpublished study conducted in 1984 by the University of Tennessee Postsecondary Education Consortium indicated that 1,231 hearing-impaired students were served by 216 institutions in 13 Southeastern states and Puerto Rico (Woodrick and Petty, 1988). These developments made postsecondary education available to more
high school students and expanded their horizons regarding the colleges they attend and careers they pursue.

For the hearing-impaired student, gaining admission to higher levels of education and acquiring increased education/training is instrumental in achieving a higher occupational level and social standing. Once admitted to a college or university, however, successful completion of courses and programs depends upon many factors, one of the most critical being the possession of adequate English language skills. Reading and writing skills are absolutely essential tools for academic success, even for the hearing student. While it is true that one of the major goals of preschool, primary, and secondary educational programs serving the hearing impaired is to develop English language skills, such programs are too often only minimally successful in this endeavor (Nebe, 1980). As a norm, hearing-impaired students leaving secondary schools are ill prepared to cope with ever-increasing communication problems related to a hearing society (Boatner, Stuckless, and Moores, 1964). Consequently, hearing-impaired students entering college frequently experience frustration with and even failure in courses and programs which require the ability to use and completely understand one or more forms of expressive or receptive English (Khan, 1987). It is understandable then, that hearing-impaired students'
inability to perform at the college level centers upon their
difficulties in reading and writing (Zambrano, 1987).

The fact that hearing impairment usually results in
acute language deprivation and low levels of academic
achievement reflects a 200-year history (Vernon, 1968).
Studies of students throughout the United States indicate
that the average reading skills of hearing-impaired
18-year-olds are at the fourth-grade level (Cooper &
Rosenstein, 1966). Especially for most prelingually deaf
students, English language competence appears to plateau at
about the fourth-grade level (Withrow, 1979). The main
difficulty lies in the structure and grammar; hearing
individuals with low IQ's can master English more easily
than most hearing-impaired students (Clements and Prickett,
1986).

Despite the availability of special programs since
1817, postsecondary educational institutions serving
hearing-impaired students inevitably inherit the language
problems unsolved by preschool, primary and secondary
programs for the deaf. Part of this failure may be
attributable to the inability of educators to resolve a
200-year-old oral-manual controversy (Babb, 1979). Another
possible factor is that the necessary conditions for
language acquisition are missing from the maturation of many
deaf children.
As a result of such traditional language problems, hearing-impaired students entering postsecondary institutions represent an immensely diverse population with respect to English language skills. The English language programs serving these students face the problem of making the deaf English rule system approximate more closely that of hearing users of English. In order to accomplish this, hearing-impaired students must be placed in communicative situations that capitalize on active involvement in language manipulation and wherein information about language structure is presented in a form maximally assimilable by their learning strategies (Prinz, 1985).

Presently, many postsecondary institutions, especially community colleges because of their global missions, provide developmental programs which include basic reading and writing skills instruction (Cohen and Brawer, 1984). But such "mainstream" programs presuppose at least a minimal familiarity with English sentence structure, a linguistic competence which hearing students have naturally acquired (Sewell, Clark, Phillips, and Rostron, 1980). However, hearing-impaired students' problems with many English syntactic structures are well documented (Quigley and Paul, 1984; Charrow, 1975). Similarly, hearing-impaired students' lexical and idiomatic knowledge is shown to be considerably below that of hearing students (Conley, 1976; Walter, 1978). Consequently, instructional methods, materials, and
practices used in mainstream developmental reading/writing programs, while often efficacious with hearing students, are not always appropriate with their more language-deficient, hearing-impaired peers.

In order to provide English language studies maximally assimilable by hearing-impaired students' learning strategies, a number of colleges and universities with programs for the hearing impaired offer "preparatory activities"—special classes for hearing-impaired students who need to improve their basic skills (College & Career Programs 1988). Although some hearing-impaired students succeed in regular college programs without the assistance of special classes for reading/writing skills, such programs go far to help students succeed in college (R. Zambrano and J. Tucker, personal communication, November 9, 1988).

Statement of the Problem

The question addressed in this study is, given hearing-impaired students' intrinsic difficulties with the English language, what curricular goals, methods and materials are the most effective in developing the English language proficiencies needed to succeed in college? Those colleges and universities whose programs for the hearing impaired include preparatory activities designed to improve these basic skills are attempting to meet this challenge. Specific information about these programs regarding
voluntary or mandatory attendance, clock hours of attendance recommended or required, placement tests and scores for placement or exemption, and program director/coordinator is provided by the College & Career Programs 1988. However, for colleges that do not offer such special programs, nowhere is there a resource providing vital curricular information about these programs: what the specific goals and objectives are; what the quality of instruction is; what is taught and how it is taught; what evaluation measures are used; what the major problems in teaching reading and writing to hearing-impaired students are and how they are dealt with.

The purpose of this study was to survey selected preparatory English language programs for hearing-impaired college students by means of a researcher-designed questionnaire in order to accomplish the following:

(1) Identify the goals and objectives, instructors' credentials and experience, instructional methods and materials, assessment and evaluation procedures, and major problems and solutions of existing programs.

(2) Analyze the above in order to ascertain the major similarities and differences of these programs.

(3) Synthesize and discuss the common and most recommended goals and objectives, elements, practices and procedures of existing programs.
From the above-gathered information and the review of the literature, recommendations were developed for a preparatory English language program for hearing-impaired college students for Clark County Community College (CCCC), Las Vegas, Nevada, and other concerned colleges that do not presently offer such programs.

The following questions served as the basis for the collection, analysis, synthesis, and discussion of data:

(1) What are the goals and objectives of selected English language preparatory programs for hearing-impaired students?

(2) What is the education, training, and background of the instructors who teach in these programs?

(3) What methods, materials, assessment and evaluation procedures are utilized in these programs?

(4) What are the major problems in teaching reading and writing to hearing-impaired college students and how are they practically dealt with?

Need for the Study

Despite recent strides in the improvement of educational opportunities, the hearing impaired traditionally are an underserved segment within higher education, provided with relatively few accommodations to address their particular needs (Kahn, 1987). Addressing this as well as other educational concerns of the hearing
impaired, the U.S. Congress in 1986 passed the Education of the Deaf Act, which in turn established the Commission on Education of the Deaf. Early in 1988, the Commission published its report, a comprehensive overview of the current educational opportunities for hearing-impaired people in this country.

Destined for an important place in the history of the field of education of the hearing impaired, the document asserts that "the state-of-the-art in the education of persons who are deaf is characterized by inappropriate priorities and inadequate resources" (Commission Recommendations, p.79). Among its 52 specific recommendations for the U.S. Congress and Department of Education were the following:

1. Establish English language acquisition in hearing-impaired students (including vocal, visual, and written language) as a paramount concern of educational institutions, a concern guiding (a) the implementation of exemplary practices; (b) the establishment of program models; (c) the determination of research priorities; (d) the design of curricula, materials, and assessment instruments; and (e) the provision of professional training.

2. Establish a Regional Postsecondary Education Program for the Deaf in the Southwest region of the United States in order to assist local postsecondary institutions in providing support services and special programs to the hearing impaired.

3. Provide federal assistance for support services and special programs to both Regional Postsecondary Education Programs for the Deaf and local educational institutions.
It is evident from the Commission recommendations that there is a need to further extend and improve postsecondary opportunities for the hearing impaired, particularly in the Southwestern United States and especially with regard to support services and special programs.

On the national level, the number of hearing-impaired students served by federal laws that guarantee public education to handicapped students in the 1986-87 school year was 68,527. (Data reported are by primary handicapping condition; hearing-impaired students with a primary handicap other than hearing impairment are not included.) Of the school age population with known causes, maternal rubella was, until recently, the leading cause of deafness due to the epidemic of 1963-65. Heredity and meningitis were the leading causes among deaf students in 1988 (Hotchkiss, 1989). All of these causes result in profound prelingual deafness, the type of hearing impairment that is by far the most devastating to natural language acquisition and development (Quigley and Paul, 1984).

In the arena of educational opportunity for hearing-impaired students in the United States, the community college emerges as a major point of access for those who wish to pursue their education beyond the secondary level. The community college is typically accessible geographically, is generally more responsive to special needs of nontraditional learners, and is relatively low cost.
in relation to other higher education institutions (Cohen and Brawer, 1984).

Like their hearing counterparts, many hearing-impaired individuals will leave college early and return later as more mature, serious students. Adults and older workers return for additional training or retraining for new careers or career advancement. Community colleges need to anticipate and to plan for an ongoing demand for services for the hearing-impaired population; moreover, they must prepare especially for those students who do not function successfully at the college level and who need special programs and support services to help them succeed (Rawlings, Karchmer, and DeCaro, 1987; Kahn, 1987).

At the state and local level, there exists a heavy demand for Gallaudet University's Center for Assessment and Demographic Studies to provide sub-national estimates of the hearing-impaired population, as services for the hearing impaired are usually administered at this level rather than at the national level. The Southern Nevada area, for example, is presently experiencing rapid growth, and it is reasonable to assume that there will be a commensurate projected increase in the numbers of the hearing impaired. Obviously, in order to better allocate resources for programs designed to meet the needs of the hearing impaired, local educational planning would benefit from population
estimates. Unfortunately, such sub-national estimates are not available (Hotchkiss, 1989).

State and local figures that are available are provided by the Nevada State Department of Education and the April 1980-88 research issues of the American Annals of the Deaf. According to a combination of these sources, 832 hearing-impaired (including deaf and hard-of-hearing) students were served by Nevada school districts from 1980-88. Of these, 56 graduated with a diploma, certificate of completion, or fulfillment of an Individual Educational Program (IEP) requirement. (These data, like the national figures, are reported by primary handicapping condition.)

The hearing-impaired students of the Nevada school districts are obviously a potential population to be served by the community college concerned with and prepared for their special needs. According to Connie Smith-Hollings, coordinator of the Deaf Resources Project of Las Vegas (Gardia, 1988), the hearing-impaired population in Las Vegas exceeds 1,600, affording another potential population to be served, especially by Clark County Community College.

Following national service trends for community colleges, Clark County Community College enrolls hearing-impaired students in accordance with its policy of non-discrimination on the basis of race, color, national origin, sex, handicap or disability, or age (CCCC 1987-89
Similarly, the CCCC 1988-91 Master Plan states its institutional philosophy of meeting the educational, interpersonal, and cultural needs of all people within its service area, helping students in the understanding of self, society, work, and citizenship, and assisting all students in the development and realization of their full potential in leading productive and rewarding lives (p. 6).

The 1988-1991 Master Plan further states as a specific goal the concern for "Students With Special Needs":

There will be an increase in the number of "special" students at CCCC. The term "special" includes ESL, [English as a Second Language] senior citizens, handicapped, developmental and re-entry students. These people have special needs in the areas of physical resources, curriculum changes, and curriculum delivery (writer's emphasis). Resources must be developed to serve the needs of these students (p. 15).

Presently Clark County Community College does not (nor do any of the other institutions in the University of Nevada System) offer special curriculum design or delivery in deference to the special language skills needs of hearing-impaired students. Rather, hearing-impaired students are provided with interpreters and mainstreamed into developmental classes for reading and writing instruction. However, researchers evaluating student outcomes in basic skills classes find that the provision of interpreters, while providing accessibility to classroom instruction, is not sufficient to help hearing-impaired students succeed. They experience difficulty and frustration, especially with
mainstream basic skills classes in reading and writing (Kahn, 1987).

Hearing-impaired students fare better and experience more success when placed in tailored reading and writing courses designed to meet their linguistic needs. In short, they learn better together, not mainstreamed with hearing students at the basic level. Upon completion of such a special-needs program, they are better prepared to be mainstreamed into college-level classes with appropriate interpreter and tutorial services.

The college seeking to truly serve hearing-impaired students must develop an English language learning environment appropriately suited to their particular reading and writing needs. In a concerted effort to investigate and establish this need, a consortium of California community colleges recently reported the following among its committee findings:

1. Of the five most often mentioned reasons for students withdrawing from college, English skills was the first. Two of the five most important student needs for success in college were special classes in English and special classes in reading.

2. A recognized problem area in serving hearing-impaired college students was the need for the improvement and expansion of current special remedial/developmental classes for English and reading.

Possible solutions to this problem were indicated as

(1) the development of a curriculum bank through the investigation of each other's curriculum;
(2) the development of a preparatory program model which would provide for one year of developmental study prior to taking any college credit courses;

(3) the exchange of developmental/remedial materials during conferences;

(4) the development of basic skills tutoring programs that start when the student enrolls, not when a problem arises in a course; and

(5) the adaptation of ESL methods with deaf students (P. Mucciario, unpublished memorandum, June 7, 1989).

Clearly, a recognizable need for special English language programs for hearing-impaired students exists as well as a need for cooperation and sharing of curriculum among such programs.

In an effort to contribute further to the research on hearing-impaired college students and the programs that serve them and to help prepare and guide those students who wish to complete their college courses and programs, this study was undertaken.

Assumptions

The following assumptions apply to this study:

1. As members of an English-speaking society, the hearing impaired need competent reading and writing skills. These skills are as important, if not more important, for them as for their hearing counterparts. Reading and writing skills are necessary tools for the academic success of the hearing impaired; they are critical as they seek advanced positions in the work force; and they remain essential in
order for them to satisfactorily function in commensurate social levels.

2. Clark County Community College will continue to enroll hearing-impaired students due to its policy of non-discrimination on the basis of handicap or disability; its institutional philosophy of meeting the needs of all people within its district; and its concern for the needs of the non-traditional student.

3. Because of their special and unique difficulties with receptive and expressive English, many hearing-impaired college students will continue to have severe problems learning to competently read and write English through the mainstream developmental reading and writing class.

Limitations

This study is a descriptive study in order to develop recommendations for a preparatory hearing-impaired English language program for Clark County Community College and for other concerned colleges that currently do not have such a program. The research is limited to the two national deaf programs, Gallaudet University and the National Institute for the Deaf; and two-year, liberal arts, vocational/technical colleges in the United States with career programs for deaf students that include preparatory English language activities.
Methods of Research

**Phase One: Questionnaire.** A questionnaire was developed to elicit needed information from directors, coordinators, or instructors of current preparatory English language programs for hearing-impaired college students. For validation purposes, the questionnaire was submitted to a teaching professional with pertinent credentials and experience in the fields of special education and tests and measurements.

**Phase Two: Distribution.** The final questionnaire, along with a cover letter, was distributed to the two national programs for the deaf and two-year, liberal arts, vocational/technical colleges with career programs for deaf students that include preparatory English language activities. These colleges were identified by the 1988 College & Career Programs for Deaf Students.

**Phase Three: Analysis and Synthesis.** The data received were analyzed according to the responses of each program director regarding goals and objectives, instruction, instructional methods and materials, and problems and solutions relative to their programs. The data were then synthesized in order to develop recommendations for a preparatory English language program for hearing-impaired college students.
Definition of Terms

American Sign Language (ASL): In the United States, the native language of deaf people who have deaf parents. It is not based on nor is it derived from English. It is different from the systems which code English or are heavily influenced by English (Humphries, 1980).

Deaf: One whose hearing is disabled to an extent, usually 70 decibels (db) International Standard Organization (ISO) or greater, that precludes the understanding of speech through the ear alone, with or without a hearing aid (Moores, 1978).

Fingerspelling: Communication by individual hand positions representing the manual alphabet of the deaf (Hirsh-Pasek, 1987).

Hard-of-Hearing: One whose hearing is disabled to an extent (usually 35 to 69db ISO) that makes it difficult to understand speech but does not preclude the understanding of speech (Moores, 1978).

Hearing Impaired: Anyone with a hearing deficiency; all significant deviations from normal, including deafness (Nebe, 1980). Throughout this study, the term "hearing impaired" describes all individuals experiencing an auditory disability that may interfere with normal interaction with a variety of people and/or with the traditional communication systems and machines used in our society. The major intent of using this term is to direct attention to the fact that
even a mild auditory disability should be taken into account when selecting instructional methods, materials, and test instruments (Zieziula, 1982).

**Manual Alphabet:** The 26 different single hand positions, used in fingerspelling, representing the letters of the alphabet (Nebe, 1980).

**Manual Communication:** The systematic use of manually produced symbols and signs to convey and receive information (Nebe, 1980).

**Manually Coded English/Signed English:** A generic term for sign communication systems which code English or are heavily influenced by English (Markowicz, 1977).

**Oral Method:** A method of training or educating the deaf or hard-of-hearing primarily through speech and speechreading (Nebe, 1980).

**Prelingually Deaf:** Those who were born without hearing or those who lost hearing before the age of 3 years (Nebe, 1980).

**Sign Language:** A generic term for different varieties of manual communication (Humphries, 1980).

**Simultaneous Method:** The method of instructing the hearing impaired through the simultaneous use of signs and speech (also fingerspelling when needed) (Johnson, 1986).

**Speechreading:** The ability to understand the oral language or speech of a person through the observation of
lip movements and facial expressions (often used to mean lipreading) (Nebe, 1980).

**Total Communication:** A philosophy which advocates the use of every possible means of communication to convey information, including gestures, sign language, speech, speechreading, fingerspelling, reading, and writing (Johnson, 1986).

**Organization of the Study**

The organization of the study is as follows:

Chapter 1, **Purpose and Organization**, consists of the Introduction; Statement of the Problem; Need for the Study; Assumptions; Limitations; Method of Research; Definition of terms; and Organization of the Study.

Chapter 2, **Review of the Literature**, investigates the literature in order to explore the pertinent issues, problems, concerns, and practices in the education of the hearing impaired.

Chapter 3, **Methodology and Analysis**, includes the methodological procedures and analysis of the data received.

Chapter 4, **Synthesis and Discussion**, provides a synthesis of the goals and objectives, practices and procedures, problems and solutions as reported by current programs, and a discussion of their relative advantages, disadvantages, merits, and detriments.
Chapter 5, Summary, Conclusions, and Recommendations, includes a summary, conclusions and implications drawn from the study; recommendations for an English language program for hearing-impaired college students for Clark County Community College and concerned colleges that do not offer such a program; and recommendations for further study. The last two sections consist of the references and appendices relating to the study.
CHAPTER 2
REVIEW OF LITERATURE

Introduction

For hearing-impaired students, language development, social growth, and the educational process are interdependent. The outcome of their educational and social adaptation is directly related to their language competence (Mindel and Vernon, 1971). The main educational hurdle faced by deaf students is acquisition of the majority language of the community into which they are born. For many students, the language of the community becomes neither their first language, in the sense that they may never achieve native-like grammatical competence in the language; nor, in traditional terms, a second language, in the sense that they may not be exposed in early life to any other language they can readily acquire (Swisher, 1989).

Because of inadequate communication skills, the hearing impaired continuously face limitations placed on them by an English-speaking society. They are faced with disadvantages in education and employment; they have limited interaction with fellow employees; and they generally experience limited contact with the mainstream of community life (Nebe, 1980). For years, educators of the hearing impaired have been preoccupied with the educational methods, materials, and
modes which will best serve students' language needs. In order to understand the learning processes and ascertain the academic potential of hearing-impaired college students, it is necessary to look at several critical areas of language theory and practice: the relationship of language and cognition; primary language acquisition; second language development; and the role that hearing impairment plays in all of these areas.

Language and Cognition

The Components of Language

Language has been defined as "a code whereby ideas about the world are represented by a conventional system of signals for communication" (Bloom & Lahey, 1978, p. 4). Spoken words, grammatically structured, form the conventional systems used in most human languages. Spoken language is generally considered to include four components: phonology, morphology, syntax, and semantics.

Phonology is the sound system of spoken language. Morphology refers to the structure of words and the way affixes are added to alter meaning or add specific information. Syntax refers to word order or the way in which words are organized in sentences. Semantics is the study of the meaning of language: how words, groups of words, and sentences are meaningfully interrelated.
Recently another dimension of language, pragmatics, has been identified: it refers to how language is used to gain what is wanted from the environment and to express communicative intent (McAnally, Rose, & Quigley, 1987). Generally, pragmatics is considered a framework from which to understand syntax and semantics (Prutting & Kirchner, 1983).

The complexity of such a language system is proven by the fact that no technique exists to teach it satisfactorily to the individual who has never before heard it spoken (Clements & Prickett, 1986). Conversely, regardless of its obvious complexity, most hearing children seem to acquire language almost by osmosis. If the child has an intact sensory system, no substantial intellectual or cognitive defects, and is exposed to a stimulating language environment, an auditory-based language system will be acquired in an apparently effortless manner. Further, when these conditions are met, the typical hearing child readily develops cognitive abilities and linguistic abilities through which the secondary language forms of reading and writing can later be developed (Quigley & Paul, 1984).

**Cognitive and Linguistic Development**

The word "cognition" is variously defined in the pertinent literature. A general overall definition describes cognition as the various modes of knowing,
perceiving, remembering, imagining, conceiving, judging, and reasoning (Nicolosi, Harryman, & Kresheck, 1980). Slobin (1979) defines cognition as the processes and structures of knowing and the branch of psychology which studies knowing, including the study of perception, attention, memory, problem solving, thinking, and language. As this is a cognitive dominant point of view which includes language as an extension or subset of cognition, herein, in microcosm, is evidenced the enduring enigma of the relationship between language and cognition.

The earlier position, the language dominant position, was that language is primary and that thinking occurs in language. In this view, the child's language development is largely determined by experience with language, and language accounts for the acquisition of concepts expressed within it (Vygotsky, 1962). Another researcher who supported the concept of language governing the development of thought processes and the growth of the mind was Whorf (1956). He proposed the concepts of "linguistic determinism," which refers to his theory that all higher levels of thinking are dependent on language, and "linguistic relativity," which proposes that language varies from culture to culture, depending upon the differences in cultural thought and orientation.

Although the present weight of empirical evidence emanating from linguistic studies does not seem to support
the language dominant hypothesis, a number of recent investigators have presented a weaker version of this hypothesis (Cromer, 1976; Schlesinger, 1977; McNeill, 1978). This weak form of the Whorfian hypothesis suggests that although language does not dictate thought, it can and does influence thought. For example, certain distinctions made in languages, such as gender and verb transitivity, are language specific and do not have real world correlative and referents.

The opposing view is the cognitive dominant hypothesis which proposes that basic perceptual and cognitive development precedes language and provides the basis for linguistic development. Language development, in this view, is a natural extension or subset of the previously developed cognitive processes (Quigley & Paul, 1984). Studies of hearing children by numerous researchers, notably Piaget and his followers, reveal that much perceptual and cognitive development takes place prior to language development and also concurrently but independently of early language development.

Piaget (1955) portrays the child as progressing through four stages of cognitive development to the achievement of mature thinking. These stages are the sensorimotor stage (0-2 years) in which the child perceives and reacts to sensory data as related to basic needs; the preoperational stage (2-7 years) during which he establishes relationships
between experience and action; the concrete operations stage (7-11 years) wherein he becomes capable of distinguishing himself from others; and the final stage of formal operational thought (11+ years) which is characterized by abstract thinking and a shift from the need for concrete objects and experiences.

Piaget does not specifically identify language as a major influence on cognitive development but rather proposes that cognitive structures provide the underlying bases for language development. He divides the development of children's language into two stages corresponding to the appropriate cognitive developmental stages. The egocentric speech stage emerges from noncommunicative thought: monologues and language play simply for the pleasure of talking. The socialized speech stage develops to include eventually all the forms required for social communication such as information, criticism, commands, requests, questions, etc.

In Piaget's view,

A symbolic function exists which is broader than language and encompasses both the system of verbal signs and that of symbols in the strict sense...it is permissible to conclude that thought precedes language...language is not enough to explain thought, because the structures that characterize thought have their roots in action and in sensorimotor mechanisms that are deeper than linguistics (1967, pp. 91-91).

Most theorists agree that important cognitive events occur during the first year of a child's life that are
extremely important for the acquisition of language. During this stage, as in all the language stages, the child is not just a passive receptor who is merely absorbing language information. It appears that he is actively processing information and is learning a great deal more about language than was previously believed (Morse, 1972, 1974; Turnure, 1971).

However, the existence of a causal relationship between cognition and language development, which would indicate that language development follows the development of cognitive structures, is not indisputably established (Bates, Benigni, Camaioni, and Volterra, 1977; Brown, 1973; Cornell, 1978; Moore, 1973). The use of words seems to emerge before the appearance of Piaget's object permanence, thus casting a doubt on a causal relationship between cognition and language. Furthermore, if a correlative relationship existed, then, as object permanence develops, so would language develop. Up to this point, correlations between Piaget's cognitive stages during the sensorimotor period and communication-language behaviors have not yielded consistent patterns (Bernstein & Tiegerman, 1985).

Sugarman (1978) suggests that prerequisites to language development include cognitive and social schemes that are gradually combined into complex communicative sequences during the stages of sensorimotor development. The semantic structure of language according to Bruner (1975) is derived
from social interaction events. Thus, children learn about speaker and listener roles through social interactions with adults, and Bruner suggests that the language to express these roles is mapped onto the child's developing social knowledge.

Sperling (1978) agrees that experience and observation can provide many facts about the world, even without language. Some concepts are formed readily and naturally prior to language, such as the concept of "the same person" seen, heard, and touched in various locales. However, language facilitates even this kind of learning by assigning a name to the person. Perhaps, Sperling speculates, a child genius without language could organize the elementary facts of experience into a useful structure of concepts; but for the ordinary child, the possibility of ever achieving adult intellectual performance without language is "absurdly small" (p. 106).

Currently, many of the specific issues of the cognition/language relationship remain unresolved (McAnally, Quigley, & Rose, 1978). Milner (1976) indicates a close and reciprocal relationship between speech and language development and emotional, social, perceptual, and self-development. Analyses such as that of Werner and Kaplan (1963) show that some categories of cognition developmentally predate verbalization, some categories
parallel language acquisition, and some are explicitly
dependent upon language acquisition.

Despite such diverse scholarly opinion, however, the
consensus seems to favor the primacy of basic cognitive
processes with language being dependent on them (Quigley &
Paul, 1984). Perception, attention, memory, and other
abilities need to develop appropriately to ensure the
adequate development of the abstract thinking processes on
which language is largely based. But although language
might not be enough to explain thought, as Piaget claims,
some studies indicate that, once developed, language becomes
so intertwined with cognition, the differential effects of
language and cognition are almost inseparable for practical
purposes (Quigley & Kretschmer, 1982). Deficits in the
development of basic cognitive processes will be reflected
in problems of language development; and the acquisition of
increasingly complex conceptual structures in the absence of
language would be akin to the impossible (Sperling, 1978).

Cognitive Development and Hearing Impairment

Given that the enduring language/cognition question
appears at this stage to favor the primacy of cognition, the
question of how the hearing impaired fare in the realm of
cognitive development arises. The cognitive development of
the deaf child is a provocative and challenging area for
study. Problems related to the attainment of concepts,
perceptual-motor processes, attributes of memory functioning, and performance on tests of intelligence and achievement are considered in numerous studies of deaf children.

However, serious difficulties are attendant upon research with the cognitive development of deaf children. Finding homogenous subgroups and gathering background data that will enable the researcher to statistically control important intervening variables present considerable problems. Early studies as well as some contemporary ones fail to acknowledge that sign language is available to many deaf children as a means for communication in a testing situation. For the most part, there exists little investigation of the necessity for a different interpretation of test responses to the combination of signed and spoken or written stimuli (Meadow, 1980).

Historically, three orientations concerning the intellectual capacity and mental development of deaf persons have variously predominated. The earliest perspective, held until the mid 1940s, viewed the deaf as deficient or significantly inferior in cognitive abilities. This view was substantiated primarily by the consistently lower performances exhibited by the deaf on IQ and achievement tests. Generally, deaf persons demonstrate a 2-year deficit on intelligence tests and a 5-year deficit on academic tests when compared with hearing persons (Sanders, 1988).
For this reason, researchers such as Pintner (1933) believed that, in the cognitive area, the deaf as a group are qualitatively as well as quantitatively different from hearing people and that the differences are inherent in deafness. This view automatically implies that the differences cannot be changed or remediated as they are an integral part of the biological makeup of deafness. On a positive note, Pintner found that the deaf excelled in mechanical and motor ability and concrete intelligence. Based on these findings, he recommended an emphasis on mechanical, motor, and concrete activities in educational programming for deaf students.

The second perspective suggested the deaf were not intellectually inferior but rather had considerable qualitative differences. Myklebust (1948, 1960) interpreted a series of studies by him and a number of his students as showing that there are quantitative similarities but qualitative differences between the deaf and the hearing when verbal factors in cognitive and intellectual tasks are controlled. The types of differences found by Myklebust and his students led him to conclude that on global measures (e.g., total score on IQ tests such as the WISC), deaf individuals equaled hearing individuals, but that the profiles of deaf and hearing individuals on specific abilities differed. Tests on a variety of cognitive
functions such as memory and creativity revealed similar findings.

Results of these studies led Myklebust to conclude that the deaf were more concrete and less abstract cognitively than hearing individuals, able to deal with reality effectively on a concrete level only. He considered this conceptual disparity between the hearing and the deaf to be due to the limitations that hearing impairment imposed on language development. He proposed that, due to the effects of the sensory deprivation of deafness, which impaired the acquisition of language, the mental growth and intellectual functioning of deaf children would not parallel that of hearing children.

Myklebust (1964) further presumed that all preverbal and nonverbal experiences of deaf children had to differ considerably from those of hearing children because the deaf did not experience audition. Thus, since the basic experiences of deaf people are altered as a direct consequence of hearing impairment, all subsequently developed behaviors are also altered, making the deaf person inherently different from the hearing person. Myklebust proposed the "organismic shift hypothesis" to explain these alleged inherent differences of deaf people.

This phenomenon is further explained as follows: the brain takes information from the senses and integrates it into meaningful units and stores it. Experiences are
organized and stored in ways to enable recall of these experiences and allow educated guesses about the possible outcomes of new situations based on what has previously happened. It is apparent that visual information is coded differently than auditory information (Tomlinson-Keasey & Kelly, 1974). This means that not only will experiences be perceived differently, but the processing of the information and schematic organization will also differ in hearing-impaired people. Therefore, it can be hypothesized that if the schematic organization is different, then there is the possibility that memory functions will be altered as well.

One who completely lacks auditory stimulation and experience will also have deficits in the ability to symbolize, which is a function of verbalization. This implies that with the preclusion of normal language development, standard mental development will not occur. This bio-social orientation as represented by Myklebust lasted from the 1940s to the late 1960s.

Rosenstein (1961) provided an insightful review and commentary on earlier studies of perception and cognition in deaf children and concluded that such studies afford no clear picture of the performance level of deaf children in the perceptual or cognitive domain. Today, there continues to be some uncertainty, even though much important research has been published in the last decade.
The third stage of this historical perspective, which began in the late 1960s and has continued through the present, denies the idea of an inherent cognitive deficit in the hearing impaired. Rather, a substantial body of research in the 1960s and 1970s views the deaf as normal in the area of cognitive skills and supports the concept that deaf people are intellectually and cognitively similar to hearing people in all important abilities. Supporters of this theory include Rosenstein (1960, 1961), Furth (1966b) and Vernon (1967).

Much of the recent research considers that the only differences in the cognitive abilities of the deaf are found primarily in the developmental timetable. Studies that support this view are based on controlling the linguistic factors in testing along with examining the concept development of hearing-impaired children on the Piagetian framework, particularly during the sensorimotor period (Sanders, 1988).

At present, it is generally accepted by researchers that any differences that do exist between deaf and hearing individuals in cognitive abilities are the result of environmental or task influences rather than being inherent in deafness. Confusion of terms, reliance on research populations with characteristics that can well confound results, and difficulties in designing testing procedures
that do not confuse linguistic and cognitive variables all add to the research problems.

Cognition, Language Development, and Hearing Impairment

The basic deprivation of profound congenital deafness is not the deprivation of sound; it is the deprivation of language (Jacobs, 1974). Based on the results of studies of the mental functioning of the hearing impaired when linguistic input and responses are controlled, hearing-impaired people's deficiencies would seem to be based on language impoverishment (Cooper & Rosenstein, 1966; Rosenstein, 1961; Bonvillian, Charrow, & Nelson, 1973). Most studies of language development in deaf children suggest that they progress through similar stages and sequences in language development as hearing children, although at a much delayed rate (Difrancesca, 1972; Odom, Blanton, & Nunnally, 1967; Walter, 1978).

In fact, no studies have shown deaf people to have the same competence in English as hearing people. Furth (1966a) reported that only 12% of deaf students between the ages of 15.5 and 16.5 have reading levels at fourth grade or higher. Several studies of over 400 deaf students found that 10-year-old hearing students had better English syntactic competence than 18-year-old deaf students in relative
clauses (Quigley, Smith, & Wilbur, 1974) and verbal complements (Quigley, Wilbur, & Montanelli, 1976).

Other studies investigating deaf students' English competence from the framework of a deviant form of English (Myklebust, 1964; Perry, 1968), of transformational grammar (Schmitt, 1969; Power and Quigley, 1973; Quigley, Smith, & Wilbur, 1974), and of English as a second language for deaf students (Charrow & Fletcher, 1973) have all shown that the majority of deaf students do not have native competence in English. Questions that arise, then, pertain to the nature of the linguistic delay caused by hearing deprivation, its relation to cognitive development, and its effects on the overall language development of the deaf child.

As Piaget (1967) was a proponent of the view that language develops from thought, he felt that language plays a minor role in early cognitive development, and therefore, deaf children should pass through the sensorimotor stage in the same manner and at the same rate as hearing children, given adequate environmental stimulation. During the sensorimotor period, children develop certain structures that will be crucial to later developing modes of thought and language. Some of these include causality; a basic understanding of gravity, spatial, and object relations; social behavior; and problem solving.

Direct interaction with the environment and the feedback the child receives from this interaction results in
the completion of the sensorimotor period of development and provides the basis for symbolization. Symbolic thought develops as the child learns to manipulate reality internally and thus gains the ability to use language symbols. This, in turn, allows the child to use language, which serves to enhance the development of the intellectual structures rather than determining their emergence.

Intellectual development proceeds from a symbolic level of play and imitation, through concrete operations, and on to the higher operations. As Piaget concludes, language plays a more important role in higher operations than in the concrete operations stage. And herein is where the deaf child's language deprivation will begin to interfere with cognitive development. That is, the more abstract the concepts, the more related they are to language. The ability to use symbolization or imagery provides an exodus from the concrete, literal levels of thinking to the more complex levels. Thus, the inability to achieve more complex levels of thought in turn impedes higher language development.

Furth's (1964, 1966a, 1966b, 1970, 1973) studies were heavily influenced by Piaget. Furth's basic conclusion is succinctly summarized in the title of his classic work, *Thinking Without Language:* logical, intellectual thinking does not need the support of a linguistic symbol system;
intelligence is not dependent on language, but language is dependent on the structure of intelligence.

Like Piaget, Furth proposed that thinking is independent of language, at least up to the concrete operations stage when children begin to develop the ability to apply logical thought to concrete problems. The formal operations period, in which abstract thought processes emerge, is seriously delayed or never reached by deaf children, resulting in individuals who are unable to function beyond the concrete level. In other words, the hearing-impaired child who never attains the formal operations stage is unable to handle abstract concepts and consequently will never develop formal symbolic language. While Furth emphasized the value of thought, he suggested additional reasons hearing-impaired children did so poorly on tests: experimenter/tester bias; language deprivation; and social deprivation.

Myklebust (1948, 1960, 1964), on the other hand, felt that language governed thought. He developed a theoretical hierarchy of experience ranging from concrete stages to abstract stages: experience, sensation, perception, imagery, verbal symbolization (language), and conceptualization. The last two stages, verbal symbolization and conceptualization, are unique to human beings and make language possible. With verbal symbolization comes the ability to internalize and
communicate with others. Conceptualization is the process by which we classify and categorize experience and form concepts and ideals. Conceptualization does not seem to be limited to verbal symbolic functioning but appears to be highly dependent on it.

Myklebust considered this hierarchy to be reciprocal in nature. If one area is disturbed, as with sensation in the case of deafness, all above it will be altered to some degree. He suggested that the language problems of the deaf stemmed from two causes: a different experiential base than hearing children and a limited contact with the language itself.

In their everyday living experiences, deaf children are highly dependent on visual imagery and thus receive sensations differently from hearing children; therefore, it seems probable that perceptions are developed differently. As a result, symbols and concepts will be structured differently. The levels of symbolization and conceptualization, those which allow the development of abstract thinking, are, in fact, those most severely affected. Without the ability to symbolize and conceptualize, the development of abstract thinking and accompanying sophisticated language structures is precluded.

As can be seen in the pertinent research, the fact that a significant relationship exists between cognitive development, language, and hearing impairment cannot be
denied. Rather, it is the degree to which they are related that has been the source of inquiry and concern. It is generally agreed that many of the academic problems of deaf students are symptomatic of a more basic difficulty than mental inferiority, namely, poor language ability (Furth, 1966, 1973; Lenneberg, 1967; Moores, 1978). Language impoverishment appears to be the most important factor in explaining the consistently lower scores of hearing-impaired students on intelligence and achievement tests.

In sum, the ability to use symbolization and conceptualization is crucial to using language at a mature, sophisticated level. Language, in turn, plays an important role in the development of higher level mental operations. While the extent to which language limits cognitive abilities may forever be a matter of controversy, clearly, facility with language sets an upper boundary on communication skills. Wittgenstein (1921) long ago made the adroit observation that the limits of one's language coincide with the limits of one's world. This statement still resounds loudly today and undoubtedly applies to the whole of the human family; but it appears to have a special meaning for the hearing impaired. At best, the lack of language competence impedes an individual's ability to communicate with others; at worst, it precludes effective communication with oneself (Nickerson, 1978).
Theories of Language Acquisition

To conclude that hearing-impaired children will acquire an inadequate language system is reasonable. Conrad (1979) suggests that by school age, even hard-of-hearing children may have sustained enough neurological deficit to impair utilization of linguistic information received exclusively through auditory pathways. In order to understand the acquisition of language by the deaf, it is first useful to consider how language is acquired by the hearing.

While significant differences of opinion exist among linguistic theorists, most agree that young hearing children do not learn language laboriously through formal teaching processes. Rather, it is learned almost casually and incidentally through continuous exposure to speech and its accompanying experiences in the home and community. Language is thus acquired without conscious effort through the interaction of the child's auditory sense and the environment. The development of speech and language has usually reached a fairly high level of sophistication by the time a child reaches school age (Sanders, 1988).

What accounts for this seemingly effortless acquisition of language by hearing children? Ideally, a theory of language should account for language growth and behavior at any point in development and explain why a child will eventually speak like an adult. As of yet, no theory has been able to account for the development of language
behavior in all of the areas of language. Undoubtedly the absence of a comprehensive language theory results from a lack of agreement on such a complex phenomenon as the production and comprehension of language (Gleitman & Wanner, 1982).

In attempts to deal with this complexity, theories of the acquisition and use of a language have been posited as closely related to a theory of the nature of language. Theories of language acquisition are grouped into several categories, and different researchers employ a variety of terms to label those categories. A scrutiny of these terms, however, reveals more similarities than differences. For the purpose of this brief discussion, four major perspectives on the acquisition of language will be considered, with the caveat that diverse terminology referring to essentially similar theories may exist in the literature.

**Behavioral Theory**

Behavioral theories emphasize the influence of the environment in the language-learning process (Skinner, 1957, 1974). For the Behaviorist, the child is a passive learner who responds to stimuli in the environment and who does not purposely self-initiate language learning. According to Skinner, language is a verbal behavior that is learned by stimulus-response (drill and practice) and is dependent on
reinforcement. Classical and operant conditioning are assumed to direct and control the increasing diversity and complexity of the child's language behavior.

Through imitation and making direct connections between rules and examples in the language, learners assimilate the underlying concepts associated with the target language, and mature language eventually results. The rate of language learning depends upon training techniques, environmental stimuli, and reinforcement of correct responses rather than on the biological maturation of the child.

The major argument against Behaviorism theory is that it does not take meaning into account. In addition, Behaviorism does not account for the generative nature of language— that is, the ability of native speakers to produce an infinite number of sentences, many of which have never been heard (Quigley & Paul, 1984; Bryen, 1982).

Linguistic/Innatiist/Biological Theory

Linguistic/Innatist/Biological theories embrace two major perspectives: that language has a structure or grammar consisting of finite rules that allow the generation of infinite sets of possible sentences; and that all native speakers innately know these rules and apply them effortlessly as they use language. According to these theories, language is rule governed, is related to the
development of the human brain, and is a direct result of biological maturation rather than experience or learning.

Chomsky (1957) argued that an adequate grammar is generated to account for the number and variety of sentences that native speakers produce and comprehend. The grammar that he devised (1957, 1965) is known as transformational generative grammar. In order to explain the facile use of this grammar, he defined the Language Acquisition Device (LAD), the ability of each learner to formulate a set of rules about the language which then forms the basis for a theory about how grammar functions in the language.

Chomsky's grammar includes both the surface structure (words, grammar, syntax) and the deep structure (underlying meanings) of sentences. He believed that a speaker's meaning was not always conveyed in the surface structure but could be found in the underlying deep structure.

Another major aspect of Chomsky's theory (1968) is that children possess an innate predisposition to acquire language; that this predisposition occurs at a critical period, generally between birth and 4 years of age; and that it is consistent across cultures. Acquisition produces what Chomsky (1965) calls "tacit competence" or a "feel" for language. Acquisition is a subconscious process; while it is taking place, the acquirer is not always aware of it and usually not aware of its results.
Finally, a corollary to the theory is Chomsky's distinction between competence and performance (1975). Competence refers to the native speaker's underlying and unconscious knowledge of the rules of grammar. Performance refers to the actual utterances of the native speaker. Typically, the performance of a native speaker is fraught with errors from a myriad of factors (distractions, memory lapses, fatigue, etc) and consequently only approximates his competence. Only under ideal conditions, which could not practically exist, would performance reflect competence. In actuality, then, transformational generative grammar is a theory of the competence of a native speaker rather than of performance, which Chomsky (1975) argued could never be adequately explained.

In sum, Chomsky's theories contributed three major notions that affect all aspects of components of linguistic study: (1) the notion that language is generative; that is, a finite number of rules can generate an infinite number of sentences; (2) the distinction between deep and surface structures; and (3) the distinction between competence and performance.

Research studies supporting Chomsky's hypotheses essentially follow two lines: one investigating the concept of grammatical rules; and the other seeking evidence indicating the existence of innate linguistic characteristics in humans.
Results of a number of studies investigating the concept of grammatical rules (Clifton & Odom, 1966; Gough, 1965; Savin & Perchonock, 1965; Slobin, 1966) support Chomsky's distinction between underlying deep structure and surface structure.

Lenneberg (1967) considered data concerning the biological basis of language. He studied the characteristics of early speech and subsequent learning phases, finding that they closely parallel stages of growth in the child. Certain "fertile" times in brain development allow rapid language acquisition, and the development of language complexity then follows a regular pattern.

The results of several other studies (Curtiss, 1981; Kuczaj, 1979; McNeill, 1966; Slobin, 1982; Springer & Deutsch, 1981; Umiker-Sebeok & Sebeok, 1980) also support the presence of innate linguistic characteristics. Although evidence supporting Linguistic/Innativist/Biological theory appears quite strong, there is significant contradictory evidence to be considered. Some developmental psychologists believe that these theories are too far removed from meaning (Bates & Snyder, 1989). Similarly, other researchers view Chomsky's transformational generative grammar as an inadequate treatment of semantics (Maratos, 1983).

According to still other detractors, the Linguistic/Innativist/Biological approach generally minimizes
the effects of different language environments. Studies have indicated that children with minimal language stimulation in their natural environment in actuality learn very little language (Bonvillian, Nelson, & Charrow, 1976; Sachs & Johnson, 1972; Snow, 1977). Children appear to need more than just exposure to language; they seem to require some form of interaction with mature language users for normal language development (Bohannon & Warren-Leubecker, 1985).

**Cognitive/Semantic Theory**

The relationship between semantics and cognition can be seen in the fact that Cognitive/Semantic theory leans toward a cognitive interpretation of linguistic structure and principles (Fillmore, 1968; Lucas, 1980; McCawley, 1968; Moerk, 1977). These theorists maintain that syntax is not separable from semantics and that, in effect, semantics is more basic in language than syntax. They oppose the idea that language is independent of other cognitive functions; rather, cognitive development is a prerequisite for grammatical and lexical development.

Groundwork for this concept was laid by Jean Piaget (1954, 1971) who produced the one framework of cognitive growth which was researched, at least in part, independent of language. However, it has been argued that most of the other studies of cognitive development are useless for
comparison with language development because cognition is studied through language (Cruttendon, 1979). The recent trend in Cognitive/Semantic theory is to show that cognitive underpinnings exist but after a short time (specifically, the sensorimotor stage), language and cognition exert influence on each other. The nature of these influences, or the interaction approach, is presently being explored (Schlesinger, 1982).

**Sociological/Sociocultural Theory**

Sociological/Sociocultural theorists, like the Cognitive/Semantic theorists, also reject Chomsky's hypothesis of language as an acquired system depending on innate linguistic characteristics. These theorists emphasize instead that the development of language is attributable to a child's interaction with other members of society. The view of pragmatics as a component of language has developed from this movement (Bates, 1976a, 1976b; Moerk, 1977).

Sociological/Sociocultural theory in general includes the beliefs that (1) natural conversation is a valid source of data; (2) sentences are not the highest level of linguistic analysis; (3) social context is relevant to linguistic rules; (4) variability is a component of linguistic rules; and (5) language functions are diverse in

Contrary evidence relative to these theories is difficult to find because they are too recent to have been assessed adequately. Quigley and Paul (1984) identify one problem as the absence of systematic rules in any of the defined specific areas. And in general, many of the assumptions of these theories are based on untested and partial support borrowed from studies of the other approaches (Bohannon & Warren-Leubecker, 1985).

Theoretical Implications

From the numerous studies conducted and available for perusal, it is obvious that there are unanswered questions left by each theoretical approach to language acquisition. However, as research also recognizes the validity of certain assumptions within each, it appears reasonable to hypothesize that innate ability and the environment must somehow interact and interrelate in the ultimate development of mature language. As Quigley & Kretschmer (1982) have stated:

Development of...educational potential requires an early environment that provides a wealth of stimulating and relevant learning experiences that are made meaningful for the child through interaction with other people by means of a fluent and intelligible communication system. Fluent communication is particularly important in infancy and early childhood when the parents or parent surrogates are the principal figures in the child's life (p. xi).
Language Acquisition and Hearing Impairment

Describing the primary language development of the hearing impaired is much more complicated that describing the primary language development of the hearing. The major difference between the deaf and the hearing child is that the typical aural/oral mode of developing an initial language system has been massively disrupted in the deaf child by damage to the hearing mechanism (Quigley & Paul, 1984). As a result, he is denied the auditory input of language and is deprived of the incidental, informal absorption of language that takes place when hearing is intact. Consequently, the deaf child cannot communicate clearly about needs, thoughts, and experiences, nor can parents, friends, and teachers communicate easily with him (Meadow, 1980).

In a word, the most devastating impact of profound deafness is that it severely impedes the normal acquisition of language. Since the auditory channel is not available as a major source of language input for the deaf child, other avenues must be utilized to create the critical language stimulation which is necessary to build and develop a solid language base. It follows that some major choices must be made as to how to foster linguistic development in the young deaf child (Honig & Jonas, 1981).
Quigley & Kretschmer (1982) have stated that descriptions of the language development of the hearing impaired must consider two important issues: (1) the nature of the language input, English or American Sign Language (ASL); and (2) the nature of the communication mode, manual or oral. In addition, these languages and communication modes may be employed in various combinations and may emphasize one or other of the primary sense modalities, audition or vision.

For years, a controversy filled with emotion and personal opinion has raged within the professional community over how best to transmit language to and receive language from a deaf child. A war between the proponents of an exclusive aural-oral approach and those who believe that a sign language component should be utilized began in the late 1800s and continues into the present. This war among educators remains an unresolved controversy in which neither side will compromise. Before it is possible to comprehend the language problems of hearing-impaired college students of the 1990s, it is first necessary to be aware of the traditional methods used to communicate with and educate the deaf.

Traditional Communication Approaches

Oral/manual controversy. Two European educators were the most influential in the development of educational
methods and communication modes used with the deaf. The first was Charles Michel Abbe de L'Epee, who founded the first public school for the deaf in Paris in 1755. He was instrumental in introducing sign language into teaching the deaf. De L'Epee's methods emphasized the use of a systematic language of signs and the manual alphabet as a means of communication with the deaf.

The second educator of note was Samuel Heinicke, who opened a public school for the deaf in Leipzig, Germany, in 1778. Called the father of Oralism, he was responsible for bringing the oral method into favor. Oralism assumes that the deaf child is psychologically and sociologically similar to the hearing child. Heinicke maintained that speech and speechreading were of paramount importance and that proper social assimilation for the deaf meant becoming a part of the hearing society by using the language of that society, i.e., speech.

While de L'Epee was publishing books on his manual method in France, Heinicke was developing his oral method in Germany. According to Gustason (1973), these two educators provide the earliest examples of the bitter conflict over the best means of education and the best modes of communication for the deaf. Despite this auspicious disagreement, however, de L'Epee and Heinicke together contributed greatly to liberalizing the social point of view toward deafness. By the end of the 18th Century, it was
demonstrated convincingly that the deaf were capable of instruction and society was obligated legally and morally to see that instruction was provided (Davis, & Silverman, 1978).

The first permanent school for the deaf in the United States, the American Asylum for the Deaf and Dumb, was established at Hartford, Connecticut, in 1817, by Thomas Hopkins Gallaudet. Gallaudet, an Episcopal minister and scholar, became concerned with the need for education for the deaf and journeyed to Europe to study teaching methods. He went first to London to a private school run by Oralists but discovered that they intended to keep their methods secret. He then went to Paris where L'Epee's successors gladly demonstrated the methods used at his school, which included manual communication. As a result of Gallaudet's studying the French manual techniques instead of the English oral techniques, the manual method, under his influence, became the primary system of deaf education in the early American schools (Nebe, 1979).

The oral method emerged fifty years after Gallaudet established the tradition of Manualism as the leading method of instruction in deaf education. Hearing educators began to oppose the use of sign language and to believe in the greater efficacy of the oral method, most likely because it was the more widely used method in Europe. Serious questioning of the manual method emerged in 1844 following a
visit by prominent educators Horace Mann and Samuel Howe to Germany, where they observed the oral methods used by Heinicke. They returned favoring the oral methods and urged that these techniques be adopted in the United States. Their proposal naturally found favor among hearing educators and parents, many of who considered manual communication to be strange and disturbing (Jacobs, 1974). As a result, the 1860s saw a revival of Oralism, which, in a few years, dominated much of Europe as well as the United States. However, its victory in the United States was less complete (Arnold, 1984).

The recommendations of Mann and Howe led to the establishment of the American school, the first lipreading school in the United States, in 1867; and in the same year, the establishment of two exclusively oral schools, the Clark School for the Deaf at Northhampton and the Lexington School for the Deaf. A noteworthy event that furthered propellancy of the oral movement occurred during the International Congress on Deafness in Milan, Italy, in 1880. A resolution was passed therein stating that, in essence, manual communication was damaging to speech (DiCarlo, 1964).

Oralism was to predominate for many decades, but a minority resisted and used combined methods, particularly in the United States. The important point to note is that this vast change took place in the late 19th Century with no careful introspection and no reasoned argumentation—simply
intuitive belief that the deaf had to acquire both the communication mode (oral) and linguistic form (the spoken language) of the general society in order to attain academic achievement and to participate adequately in that society (Quigley & Paul, 1984). The great strength of Oralism is its stress on the importance of English-speaking, reading, and writing—and hence on the possibility of integration. And it is a fact that 90% to 95% of deaf children have hearing parents. Oralism assumes that it is strange to belong to a deaf community that does not include one's parents, brothers, sisters, or children. And since only 15% of the children of deaf people are deaf, attempts to establish a deaf community would surely suffer from lack of continuity from generation to generation (Lane & Battison, 1978).

It is also important to note that when Oralism became the predominant educational policy at the turn of the century, the deaf community was allowed no voice in the development of such policy (Furth, 1973). All of the initial efforts in educating the deaf and selection of the methods used were determined by hearing people who had only vicarious experience with deafness (Jacobs, 1974). It appears that the pleas of the deaf for the acceptance of a visual/gestural mode of communication went largely unheeded (Moores, 1978).
However, the victory of Oralism was never totally complete in the United States. Oralism continued in the prestigious private schools, but Gannon (1981) points out that a deaf consciousness and organization were always present and that deaf people resented the domination and patronage of hearing people and their language. There is at least one point, however, on which almost all supporters of the oral system and the supporters of the manual system agree: the level of education attained by the majority of deaf students is inadequate.

Study upon large-scale study shows that the average adolescent deaf student at the completion of secondary school achieves no better than a third- or fourth-grade reading level (Conrad, 1977; DiFrancesca, 1972; Wrightstone, Aronow, & Moskowitz, 1963). The Babbidge Report (1965) disclosed that, out of 920 students leaving public residential schools during or at the end of the 1963-64 school year, the median grade average for the whole group was just below the seventh grade level as measured by the Stanford Achievement Test. Of the 365 students from this group who received diplomas, the median fell in the eighth-grade level. Since intelligence is distributed normally in the deaf population as in the hearing one, these statistics show that something is fundamentally wrong with educational practices and procedures (Swisher, 1989).
Current Communication Approaches

The oral approach of the 19th century became the aural/oral approach of the 20th century with the advent and rapid technological development of electronic amplification. A sequel of the aural/oral methods was the acoupedic (or unisensory) method which emphasized the use of audition and de-emphasized the use of vision in the early education of the deaf (Pollack, 1964). During the early and mid-1900s, most programs for the deaf used aural/oral methods with one major variation: private residential schools prohibited manual communication in any form, while most public residential schools permitted manual communication in some form, especially with older children, both in and out of the classroom. This pattern of communication approaches continued in the United States until about 1970 (McAnally & Quigley, 1987).

Increased public and governmental interest in general education during the 1960s and subsequent financial support affected special education, including education of the deaf. Growing dissatisfaction was expressed with the low literacy levels that prevailed among the hearing impaired, resulting in an outburst of interest in new methods. Inspired by the publications of Chomsky (1957, 1965), Stokoe's work led to an influx of linguistic research on American Sign Language (ASL) (1960, 1971, 1972, 1975). The result of Stokoe's outstanding contributions was reflected in numerous
publications on the grammar and teaching of ASL as well as a cadre of linguistic and psycholinguistic researchers studying ASL.

Along with the resurgence of American Sign Language, the 1960s and 1970s witnessed the development of several systems of manually coded English. About 65% of hearing-impaired students in this country are now taught with some combination of manual and oral communication (Jordan, Gustason, & Rosen, 1976). Today, the various communication forms can be classified under three major categories which represent two modes of communication and two languages: oral English; manually coded English; and American Sign Language. These communication modes and languages are used singly or in combination, resulting in the teaching methods used today with the hearing impaired.

Three of these combined methods are particularly of note. The Rochester Method, after the Rochester School for the Deaf, is a combination of speech and fingerspelling. The Simultaneous Method is the simultaneous use of oral and manual communication, usually with English structure. Total Communication is a system and a philosophy which permits any and all methods of communication: ASL, visual or manual English, and spoken and written English.

American Sign Language is not used systematically in all programs for the deaf but perhaps will be used more extensively in the near future. At present, there is
growing interest and support for the concept of developing ASL as the first language of deaf children with English alongside in a bilingual situation or developing English later as a second language.

**Teaching Implications**

For those aspiring to teach the hearing impaired, certain implications emerge from the review of the literature. In order to design a developmental/remedial language program for hearing-impaired college students, it is necessary to know the diverse aspects of their communication and language backgrounds. To use an analogy, one cannot repair a malfunctioning machine without a working knowledge of how it works. Hearing-impaired students will enter postsecondary programs with a wide spectrum of all of the combinations and variations of sign language, speech, speechreading, reading and writing skills. Understanding the language-learning situation of hearing-impaired students means knowing the distinctions between oral English, manually coded English, and American Sign Language; recognizing the content and skill areas associated with native-language instruction; and acknowledging the philosophy and methods of the teaching and learning of English as a second language (ESL).
ESL Learning Theory

Researchers agree that students of English as a second language have universal learning problems, similar to first language acquisition difficulties (Bailey, Madden & Krashen, 1974; Dulay & Burt, 1975; Richards, 1971). Second language learners progress through some of the same stages as those learning a first language. Speech of beginners, for example, is typically "telegraphic"; it lacks inflection and function words such as articles and prepositions (Littlewood, 1984).

However, the success of the second language learner depends on other variables not inherent in first language development. Native language (L1) is such a variable in acquisition of second language (L2) structures. Although an "order of acquisition" common to all language learners exists, individual differences in ease of acquisition is sometimes predictable by the nature of the first language (Lado, 1957). The ability or inability to comprehend a "foreign" language structure often depends on the grammar and vocabulary of the native language.

Acquisition abnormalities caused partly by interference from the native language have been the focus of several studies of language learning (Huang & Hatch, 1978; Pienemann, 1980). Many L2 errors are directly attributable to transfer from the first language. In the light of this, ESL instruction recognizes that certain errors are commonly
associated with particular native language structures, a realization which has eventually resulted in more efficient individualized instruction. But although the L1 does significantly influence acquisition of L2, learners tend to rely less on native language patterns as their knowledge of the second language increases. Depth of expression is gradually developed as the learner internalizes and uses the underlying concepts of the L2.

Prominent L2 Models

Bialystok's (1978) model of second language learning accounts for discrepancies in individual achievement and universal learning strategies. His input > storage > output arrangement of information delineates how individuals differ in their efficiency in language learning. Input refers to the linguistic knowledge that is filtered into the mind; storage describes the processing of that information; and output relates to the form and skill level of the produced language. The learner acquires language by comprehending linguistic input somewhat beyond his level of competence. Input can be garnered through books, immersion methods, exposure to English in and out of the classroom, and interaction with the native culture.

Paralleling Bialystok's model of language learning is Krashen's Acquisition-Learning dichotomy, likewise a proposed working model for understanding second language
learning (1981, 1982, 1985). In Krashen's view, acquisition refers to the subconscious impetus for speech; it corresponds to theories of natural learning and spontaneous utterances. Learning, in contrast, relates to the conscious attention to rules and the self-correction process.

Stored and processed knowledge is determined by the Input Hypothesis, which relates to acquired, not learned, structures. It encompasses all facets of exposure and interaction with the second language. The Input Knowledge is influenced by the Affective Filter, those aspects of individual personality which regulate what will be acquired. These variables include motivation, self-confidence, and anxiety. The weaker the filter, the greater the language acquisition.

Krashen's Natural Order Hypothesis is that grammatical morphemes are learned universally in a special order. He uses the term "developmental errors" for those mistakes language learners make which are virtually universal. These mistakes could lead to the formation of an "interlanguage" (Selinker, 1972), a language the student creates based on the data he was exposed to and his own processing rules. The interlanguage shares properties with both the native language and the second language.

Another key facet of gaining second language knowledge, according to Krashen, relates to the use of the Monitor, the conscious editor of utterances initiated by the acquired
system. Monitor use varies from over-use (self-correction causing hesitant and unconnected speech) to under-use (no conscious correction of errors) to optimal use (a combination of spontaneous and self-corrected speech). Krashen attributes the development of the Monitor to a combination of cognitive and affective factors, both of which are possibly connected to the onset of formal operations in adolescents around the age of twelve.

Output is important as well in language acquisition. Error correction should supply the rules from which the second language learner generates hypotheses. However, conscious correction of errors and learning do not necessarily improve acquisition; many students learn a rule but never apply it, making the same mistakes over and over again (Brown, 1973). The place of grammar in language learning, according to Krashen, serves to activate the Monitor, the self-correction device. Progressively, rules will be internalized and made part of the acquired knowledge of the learner. While the role of error correction has remained open to debate, researchers generally agree, given variations in terminology, on the Learned-Acquired dichotomy of language mastery.
English Acquisition and Hearing Impairment:

The Problem of Input

First and second language acquisition theory explains that one point of universal acquiescence is that access to input is required for language learning (Chomsky, 1965; Lenneberg, 1967; Krashen, 1985; Bialystok, 1978, 1983). Essentially, the problem for the hearing-impaired student learning an auditory-based language is that the major channel for language learning, namely hearing, is substantially blocked, leading to reduction in both quantity and quality of available input. The prognosis for auditory language learning in the deaf student depends upon several factors: the severity of hearing loss, the quality of the residual hearing, and the age at which the loss occurs. The extent of family involvement in the student's education also seems to be of importance (Bodner-Johnson, 1986) along with intelligence, socioeconomic status, and other factors that affect the educational progress of all students. The critical question that arises from these considerations, then, is what are the sources of linguistic information about a spoken language available to the hearing-impaired student?

One source of linguistic input is the amplification of sound by means of a hearing aid. However, amplification may provide only fragmentary auditory information, since hearing aids cannot "correct" damaged hearing to a level of normal
acuity. For some profoundly deaf individuals, the only information that gets through is the low-frequency vowels and consonants and some prosodic information. Inflectional morphemes, because unstressed, are difficult to perceive. This makes the acquisition of morphology and syntax very problematic (Swisher, 1989).

A second potential source of linguistic information is speechreading. The information provided by speechreading is limited in two major ways. First, vision is much more restricted spatially than hearing, particularly where fine detail must be discriminated. In order to read speech, one must be looking directly at the speaker's lips. Conversation behind the deaf person's back is not available as input nor is any speech not directly focused on. Attempting to follow a multiparty conversation by speechreading is particularly difficult.

The second limitation is that linguistic information available on the lips is far from complete. Many of the sounds that are visible on the lips look identical, so that without sound, one can detect no difference between them. Moreover, sounds occurring farther back in the mouth are not visible at all. In casual speech, only about 40% of the phonemes are visible (Swisher, 1989).

Another problem related to speechreading is that skill in it is correlated with language level (which is in turn related to the level of hearing loss). If a person knows
the language already, there is at least the possibility of being able to speechread, although skill is certainly not assured. However, for the congenitally and profoundly deaf, adequate linguistic input through speechreading remains, at best, extremely dubious.

A third potential source of input is the representation of spoken language through a signed code. Since vision is directional, the amount of signed information reaching the person is limited by the necessity of looking directly at the signer, restricting, at least in the practical sense, the overall quantity of available input. Further, since the hearing families of deaf children do not always learn sign (and roughly 95% of deaf children are born to hearing parents), the child may not receive any signed English input at home. And even when signing is used in the home, it is rarely accomplished by family members with a high degree of fluency.

It is, in fact, not easy in practice to achieve a complete mapping of English sentences into signs. There are recognized conceptual problems related to learning an auditory language through signed codes, in addition to the fact that the input provided is often not complete. Considerable variability in how much of the spoken message is signed has been reported, with drastic reduction of the message being found in some cases (Marmor & Petitto, 1979). Given such reduced input, it is not difficult to predict the
problems deaf students will experience in acquiring the syntax and morphology of a spoken language.

Theoretically, one source of complete grammatical input is the printed page, and so a logical way to provide linguistic input to the hearing-impaired student must be through reading. However, a plethora of statistics indicating undeniably low reading levels in the deaf population demonstrates something is fundamentally wrong with the notion that it is easy to learn a first language through print alone. A key point is that none of the contextual support or on-line adjustment of conversational language learning is available from printed text, where, on the contrary, meaning must generally be derived from words alone. Another reason why learning language from print is likely to be more difficult is that written language lacks the information provided by intonation and stress patterns that may help the student perform critical syntactic analysis.

The phenomenon of hearing loss itself as a formidable filter of linguistic input is described by Gass (1988) and is somewhat similar to Krashen's Affective Filter. Gass cites several factors which serve as "ambient speech filters." These filters determine whether language data are noticed, hence made available for processing. The factors are frequency of occurrence of a linguistic form; affective factors including social distance, status, motivation, and
attitude; prior knowledge, including knowledge of the world and existing linguistic knowledge; and attention, which allows learners to become aware of a disparity between their production and that of native speakers.

Gass's model indicates that, in effect, a hearing loss acts as a massive initial filter on reception of ambient speech, preventing language data from reaching the deaf learner, at least in an undistorted form. For one with a profound hearing loss, the great majority of linguistic data cannot get through the filter to be perceived, and hence cannot be comprehended, processed, and used to support output. Finally, the filter acts on the learner's perception of his own output, making it difficult to compare output against the production of native speakers and to perceive a mismatch.

As if this larger filter of available data were not sufficient, the data that do get through will be additionally affected by other ambient speech filters (Gass, 1988). One such filter is damaged motivation due to constant frustration in learning. Long histories of grappling with the very difficult task of acquiring an auditory language on the basis of reduced input, coupled with the prestige of English in the dominant society are likely to produce conflict in hearing-impaired students. In addition, since the language in which they are typically the most fluent, American Sign Language, is a minority language,
this too is likely to complicate students' attitudes toward language learning.

ASL, Signed English, and Input/Output Variation

The term "sign language" tends to be used generally for linguistic communication using the hands. However, the term obscures the difference between a natural sign language and signed codes devised to represent a spoken language. American Sign Language is a natural sign language, an entity unto itself. It is not based on nor is it derived from English. ASL possesses a fully developed linguistic system with a "phonology" and syntax and its own grammatical rules (Magrath, 1985). As Klima and Bellugi (1979) note:

American Sign Language turned out to be in fact a complex structured language with a highly articulated grammar, a language that exhibits many of the fundamental properties linguists have posited for all languages. But the special forms in which such properties are manifested turn out to be primarily a function of the visual-gestural mode (p. 4).

Signed codes for spoken languages, on the other hand, are "secondary" sign languages (Kendon, 1984), and they are by definition parasitic on spoken languages to a greater or lesser extent. The signed codes for English have been devised explicitly by educators of the deaf to map the spoken language visually, and these codes differ in terms of how much of the spoken language they attempt to and actually do represent. The codes are not used by deaf adults and
have no community of users for whom they are a first language.

American Sign Language, on the other hand, is the uncontested communication system of the adult deaf community in the United States, and its lines of transmission are complex. In the past, when the majority of deaf children were educated in residential schools for the deaf, ASL dominated in the dormitories and on the playground, while classroom teachers, who considered any form of sign a contagious menace, labored diligently to teach English. Transmission of ASL from deaf child to deaf child still occurs, although now less common due to mainstreaming and placement in self-contained classes in hearing schools.

Children who attend day programs for the deaf are also less likely to gain access to and acquire the standard form of ASL as there is less opportunity to interact informally, and deaf adult sign language models are sparse. If a child were brought up exclusively in an oral day program, acquisition of ASL occurred only in adulthood when he left school and entered the deaf community.

Today, the situation is more complex in the sense that about two-thirds of deaf students are exposed to some variety of signed English (Jordan, Gustason, & Rosen, 1976) as well as ASL. The several manual systems in existence are successful in making communication possible, but because they all share the common feature of borrowing signs from
ASL and placing them in English word order, they also are not an effective method for teaching English (Goldberg & Boardman, 1974). Furthermore, learners must sort out the relationship between the signed code and ASL, a situation which fosters variety and even confusion in linguistic input/output (Swisher, 1989).

Three additional factors serve to introduce variation in both input and output. One is the phenomenon of Pidgin Sign English (PSE), a creolized language used largely by deaf and hearing people communicating with each other. A phenomenon somewhat similar to "Interlanguage" development (Selinker, 1972), PSE lies on a continuum between ASL and the signed codes for English, and it can partake to a greater or lesser degree of both languages, depending on the proclivity and proficiency of the users (Lucas & Valli, 1988). One common characteristic of all varieties, however, is that English word order is followed.

A second factor affecting language variation is that ASL, as a minority language used by people within a larger majority culture, is itself influenced to some extent by English in its lexicon and in its syntax (Fischer, 1975; Swisher & McKee, 1989). Lacking instruction in differences between ASL and English, deaf students may have very little understanding of the fact that they use different linguistic systems in different contexts. This may lead to confusion when they are called upon to write English, especially.
To counteract this confusion, some fairly isolated but promising experimental programs exist that approach English and ASL contrastively in order to heighten awareness of the differences between the two languages and to enhance the acquisition of English (Akamatsu & Armour, 1987; Schneiderman, 1986; Strong, 1988; Brodesky & Cohen, 1988). Methodological and evaluative information is needed on the ongoing progress and outcomes of these programs.

The third factor in input/output variation is particularly intriguing in the light it sheds on language acquisition. Evidence indicates that learners who are exposed only to a form of signed English and who have little opportunity to interact informally still tend to develop features of ASL not present in the input (Gee & Goodhart, 1988; Livingston, 1983; Supalla, 1988; Suty & Friel-Patti, 1982). However, the studies also show that the children did not uniformly develop standard ASL because their grammatical systems were all somewhat different.

The fact that learners (albeit inadvertently) develop a natural language (ASL) in the visual-spatial mode may very likely complicate the acquisition of the contrived signed English code. In addition, the signed input provided by hearing adults using the codes is not always complete (Baker, 1978; Bernstein, Maxwell & Matthews, 1985). Marmor & Petitto (1979) suggest that teachers may not give an exact manual representation of English when attempting
simultaneously to speak and use a signed coded. Supalla (1988) further argues that signed codes for auditory languages are not suited to the visual modality, and this may mean that English will have to be a second language for deaf language learners.

English, ASL, and Second Language Learning:
Teaching Implications

Education for hearing-impaired students centers on language skills such as speech, vocabulary, composition, grammar, reading, speech-reading, and remedial English. In spite of this emphasis upon their presumed native language, however, in numerous measures of English language ability, the deaf consistently score lower than hearing controls (Goetzinger & Rousey, 1959; Miller, 1958; Moores, 1970). In tests of writing ability, deaf subjects evince large vocabulary deficits relative to hearing subjects (Templin, 1966, 1967), and the grammatical correctness and complexity of their writings are far below those of hearing controls (Stuckless & Marks, 1966; Dunagan, 1969; Marshall & Quigley, 1970).

It is doubtful that this language deficit is ascribed to a more general cognitive deficit (Furth, 1964). Copious reviews of the literature challenge earlier claims of a cognitive deficit and strongly indicate that the distribution of intelligence is similar for deaf and hearing
populations (Vernon, 1967, 1968; Bonvillian & Charrow, 1972; Mindel & Vernon, 1971; Meadow, 1980; Quigley & Paul, 1984). An alternative to the cognitive deficit explanation is that English is not the native language of the prelingually deaf and that they learn English as a second language (Charrow & Fletcher, 1973). But because hearing people have historically controlled the education of the deaf, the importance of English has been emphasized not only for the purposes of education but also for the goal of integration of the deaf into the hearing world. Perhaps as a consequence, skill in English is valued in the deaf community, with "higher status and intelligence . . . attributed to those individuals who used a variety of signing more like English, and low status to those who did not" (Padden, 1987, p. 44). On the other hand, with the recent and ongoing research into the grammatical structure of signed languages, much unabashed pride in ASL proclaims it the natural language of the deaf, especially among the educated, and ASL is now used to great effect in political, social, and aesthetic dimensions (Swisher, 1989).

Given the poles of opinion concerning ASL and English, hearing-impaired college students enrolling in developmental English classes will represent diverse backgrounds and hold a variety of views, and in fact, may experience conflicting opinions within themselves. Strong support for ASL may conflict with the insidious doubt that it is not as "good"
as English, resulting in feelings of inferiority about themselves and even greater insecurity about their English skills. For some, this ambivalent attitude in turn may result in resentment toward English as the "hearie" language, cumbersome and redundant in the world of the deaf.

On the other hand, students who come directly from oral programs or mainstream situations will traditionally identify with the hearing majority rather than with the deaf community. Further, if contact with deaf adults in their formative years has been significantly limited, there will have been little or no exposure to ASL. These students' attitudes toward English most likely will stem from hearing families and teachers who have nurtured in them an unwavering faith in the value of English skills in all walks of life. Nevertheless, it should be noted that in spite of this outlook, only an extremely small percentage of deaf people ever achieve what is akin to native competence in English (Miller, 1983).

In recent years, the trend in deaf education is Total Communication, in which signs, fingerspelling, speechreading and the written word are utilized. Total Communication programs generally use signed English codes rather than ASL, although many of the signs have been adopted from ASL. This innovation seemed to be an ideal solution, as deaf students would readily learn English because of exposure to a complete visual model. Few argue, however, that the early
promise of Total Communication has been fulfilled. Most educators and researchers agree that gains have been realized, but students are still far from the level of competence speculated when these programs began (Eagney, 1987).

In reality, assumptions cannot be made regarding the language learning hearing-impaired college students have been exposed to nor can predictions be made as to what their skills and attitudes will be. One expectation that can be safely harbored, however, is that tremendous diversity in background and ability will continue to occur. Additionally, English, in one way or another, is likely to have been an issue for these students for most of their lives. The amount of frustration they have suffered is attributable primarily to their level of skill with the language, which in turn is related directly to the severity of their hearing loss and age of onset.

In sum, the difficulties that hearing-impaired students face in learning and improving their English are many and thorny. The majority of them will not enter college programs with the language skills their hearing peers have acquired (Moeller & McConkey, 1983). In addition to the drastic limitations on input that often confound the development of grammatical competence, students are likely to experience much frustration in attempting to learn the language. Depending on personality variables such as the
ability to maintain motivation despite formidable obstacles, such frustrations may or may not prevent them from pursuing this difficult task as college students.

Whatever their language background and attitudes, however, hearing-impaired students soon realize the need for English skills since one of the most important tasks of a college student is obviously to be able to communicate effectively in writing and to comprehend written materials. Further, students entering programs at the postsecondary level most likely do so with an eye to bettering their career potential, thereby increasing their chances for a more satisfying and fulfilling life. This lofty but achievable goal will certainly go far in providing a strong, reality-based motivation.

Given the fact that a wide variety in the degree of English language mastery exists among hearing-impaired college students, many researchers and practitioners believe that their problems can be overcome—specifically by the means and methods of English as a second language programs (Goldberg & Bordman, 1975; Goodstein, 1982; Goldberg, Ford, & Silverman, 1982; Byrd, 1985). As Goldberg (1975) puts it, "The assumption underlying ESL methodology is not that students need correcting of the language they already have, but an input of language they do not yet have" (p. 22). As deaf students' first language, if any, is some variation of Sign, ranging from pure ASL to PSE to some variant of signed
English, the acquisition of English for them is a second language/dialect situation (Charrow, 1975; Goldberg, 1977).

For the hearing impaired, however, the language problem is far more than difficult in the ordinary sense of the word:

The acquisition of a spoken language by an individual who is born profoundly deaf presents difficulties of such magnitude that only a small minority has been found to achieve competence in English as demonstrated by their writing. Among deaf persons, competence in written English ranges from the totally incomprehensible to (for a few) near native skill. With few exceptions, English remains a foreign language for the deaf (Woodward & Markowicz, 1960, p. 61).

Goldberg and Boardman (1974, 1975), in their work at Gallaudet University, have illustrated the second-language problems of hearing-impaired students by comparing writing samples from hearing non-native users of English with samples written by deaf students. Their comparisons do not merely imply that the acquisition of English by hearing-impaired students is an identical task to that faced by foreign hearing students. Rather, the deaf students' task is made much more difficult not only by the remoteness of English from Sign, but by the fact that they must acquire the language through the eye with little help, if any, from the ear.

Because of the absence of the auditory loop, hearing-impaired students' access to English is limited to speechreading, to some form of manual communication, and to the written word. Speechreading is rarely, if ever,
successful in imparting English as it is extremely
difficult, incomplete, and highly ambiguous, and presupposes
a knowledge of the spoken language (Markowicz and Woodward,
1982). In the same vein, Markowicz (1974) has pointed out
numerous shortcomings with the signed English codes which
render them far from ideal as a teaching method.

Since neither speechreading nor the manual English
systems can impart English clearly and reliably, deaf
students are left with the written word as their only source
for consistently correct models of the language (Byrd,
1985). Goldberg (1977) suggests that the difficulties
inherent in attempting to acquire a language without the
reinforcement provided by hearing is apparent when we try to
"envision ourselves attempting to learn Japanese by means of
the written word only, through the eye alone" (p. 25).

In an effort to deal with the English language problems
of hearing-impaired college students, the English faculty of
Gallaudet University established their English Language
Program in the Fall of 1975. By that time, linguistic and
sociolinguistic research combined with years of collective
classroom experience had convinced them that an English
Second Language approach to English language instruction was
the logical and realistic choice as opposed to remedial
methods:

Remedial work assumes that the students already
possess enough language to say what they want to
say. Their structures may need correcting or
tightening, but they already feel the need to say
what other English speakers say.... This is not the case with the students [in the English Language Program]. They simply do not have enough English inside them to want to make such [grammatical] distinctions, nor do they feel the need to do so (Bordman, Byrd, & Schlien, 1981, p.vii).

In addition to the awareness of absence of English language input, ESL philosophy accepts the fact that very few members of the deaf community have or will ever achieve a native command of English. Since native fluency is not the goal of second language learning, such emphasis helps to alleviate some of the frustration experienced by teachers and students alike. The ESL approach allows concentration on improvement in the control of English rather than the attaining of some impossible goal (Byrd, 1985).

Further noted by the Gallaudet teachers and researchers is that, in general, mass-produced ESL material is useful for hearing-impaired students since they move through phases similar to those of hearing second language learners and they share similar language problems. However, further reinforcement is needed because deaf students lack the constant feedback from hearing the language spoken, which is present for the hearing second language learner.

Consequently, in compensation for the lack of auditory feedback, hearing-impaired students need at the very least

1) Continuous, cumulative exercises with more opportunity for practice, application, and review than is commonly found in ESL material written for the hearing.
2) More emphasis on the visual aspect of the learning situation: attractive illustrations, visual charts, diagrams, and many other visual aids.

3) Additional information that relates to the problem of conceptualization. Often detailed explanations are required to distinguish between nuances of meanings conveyed by morphemes, prefixes, suffixes, etc.

4) Materials that recognize that hearing-impaired students, while needing instruction in the English language, do not necessarily need instruction in the mores of the culture.

5) Materials that deal specifically with some of the problems that appear to be unique to hearing-impaired students, perhaps as a result of the lack of a sound first language base or interference from a first language (Goodstein, 1983).

Germaine to the last two requirements is another feature of a sound ESL-related program for the hearing impaired: an active attempt to utilize the bilingual and bicultural background of students. Although there may be some interference between a natural sign language and a signed code for a spoken language, evidence exists from a variety of sources that most of the problems deaf students experience in learning English do not result from ASL (Swisher, 1989).
First, students unexposed to ASL and who lack a sign system themselves make errors comparable to those of the rest of the deaf population (Swisher, 1989). Second, errors unique to deaf students are emphatically not translations from ASL (Quigley & King, 1982). In a recent study, 30 professionals in audiology, speech pathology, deaf education, and language teaching, when asked to distinguish holistically between the compositions of deaf signers, deaf nonsigners, and ESL students, were unable to make the judgments correctly (Langston & Maxwell, 1988). Third, research reveals consistently that the small percentage of deaf students with deaf parents, those most likely exposed to ASL as the primary language at an early age, outperform the rest of the population in academic achievement, including English skills (Geers & Schick, 1988).

The results of the classic study by Charrow & Fletcher (1973) specifically exemplified this. It suggested that, not only do deaf students of deaf parents learn English as a second language, but their significantly better performance on the TOEFL (Test of English as a Foreign Language) may be related to their early competence in ASL.

From these and similar studies, it can be reasonably construed that ASL is probably not a significant impediment in itself to the acquisition of English language skills; rather, it is apparently somewhat of a help in the sense that having some first language is important in the
acquisition of a second (Hatfield, Caccamise, & Siple, 1978; Cummins, 1979, 1980; Krashen, 1982; Luetke-Stahlman, 1986; Geers & Schick, 1988). Increasingly, the consensus among researchers and practitioners is that a conscientious effort to teach deaf children ASL as a first language is far more effective in producing later facility with language tasks (Stokoe, 1970; Charow & Fletcher, 1978; Gormely & Franzen, 1978; Gormley & McGill-Franzen, 1980; Luetke-Stahlman, 1982; Brannon & Livingston, 1986; Brodesky & Cohen, 1899).

In a very practical sense, ASL can be used to help clarify points under discussion in English instruction by means of comparison and contrast. Further, internalization of ASL rules leads to a readier acceptance, assimilation and toleration of English rules (Suty & Friel-Patti, 1982; Livingston, 1983; Champie, 1984). Hence, a logical systematic transition from ASL to signed English to written English is a realistic goal (Fant, 1974; Luetke-Stahlman, 1983).

In addition to helping students see the differences and similarities between ASL and English, the use of ASL reinforces positive feelings regarding cultural identity with the deaf community—something all too often missing from the deaf educational programs of the past (Goodstein, 1983). The deaf possess an inalienable right to a language of their own. They have the right to be exposed to ASL as early as possible in their lives and thereby to gain access
to the rich heritage which they share with all other deaf Americans (Clements & Prickett, 1986).

Summary

The most fundamental issue in effective communication for the deaf is that they are more adept at learning languages in the visual-spatial mode than in the auditory-vocal mode. This is evidenced by their generating grammatical structures suited to communication in visual space even when these structures are not present in the input (Swisher, 1989). But, while it is being increasingly recognized that English is truly a second language for the prelingually deaf, their natural first language, ASL, is yet to achieve its deserved status educationally (Gormley & Franzen, 1978; Gormely & McGill-Franzen, 1980; Champie, 1984).

Additionally, the "approved" systems--Oralism, signed codes for English, and the touted Total Communication--remain largely unsuccessful in English language learning. Various reasons are proposed for these disappointing results, the most telling of which emerges as deaf children's deprivation of the easy and natural communicative interaction with parents and siblings that hearing children enjoy in their earliest years. Even those parents who learn a signed English code, and not all do, are frequently not fluent enough to provide the steady stream of language to
which hearing children are naturally exposed (Eagney, 1987). It is, then, the lack of adequate input more than any other single factor that must assume culpability for the prodigious English language problems of the deaf.

The gift of language is the indisputable birthright of all human beings, no less for the deaf than for the hearing. The language legacy bequeathed to all deaf individuals is a natural, visual-gestural language, in this country, American Sign Language. ASL promises to students two substantial benefits: improved English and better self-concept. And this promise is resoundingly echoed by the recommendations of more and more practitioners, researchers, and those genuinely concerned with the language well-being of the deaf: encourage the development of ASL as their natural first language; use it in awareness of a worthy and contributive minority subculture within the majority society; use it as the primary language of instruction and as a tool for demonstrating the differences between ASL and English; in short, use it to more effectively teach and promote the better learning of English--as a second language.
CHAPTER 3
METHODOLOGY AND ANALYSIS

Introduction

The purpose of this study was to survey selected preparatory English language programs for hearing-impaired college students in order to (a) identify the goals and objectives, instructors' credentials and experience, instructional methods and materials, assessment and evaluation procedures, and problems and solutions of these programs; (b) analyze these data in order to ascertain the major similarities and differences of these programs; (c) synthesize and discuss the goals and objectives, practices and procedures of these programs; and (d) develop recommendations for a preparatory English language program for hearing-impaired college students for Clark County Community College and other concerned colleges that do not presently offer such a program. This chapter will include a description of the research procedures and an analysis of the data received.

Methods of Research

Questionnaire

A questionnaire designed to elicit the information needed from directors, coordinators, or instructors of current preparatory English language programs for
hearing-impaired college students was developed by the researcher. For validation purposes, the questionnaire was submitted to a teaching professional with pertinent credentials and experience in the fields of special education and tests and measurements. Upon discussion and recommendations, it was revised accordingly. The final questionnaire is reproduced in entirety in Appendix B of this study. In abbreviated form, the following information was requested:

1. **Goals and Objectives.** What are the program goals and objectives?

2. **Instruction.** What degrees, special training, or background do the instructors in your program have?

3. **Instructional Methods.** Of the following [instructional methods], which do you use, how much (percent of time spent [overall estimate]), and can you briefly describe?

4. **Instructional Materials.** Of the following [instructional materials], which do you use, how much do you use them (Heavy, Moderate, Light [overall estimate]), and would you include titles/types and a brief description.

5. **Evaluation.** What pre-/post tests and/or other evaluation instruments, standardized or teacher-made, do you use in your program? (Please include titles and a brief description).
6. What, in your experience, are the major problems in teaching deaf students to read and write English, and what are your recommended solutions? A final request solicited program instructional materials (brochures, course outlines, samples of drill/practice materials, reading and writing assignments, teacher-designed tests, and student writing samples, if available, from beginning and end of course.

Distribution

The questionnaire along with a cover letter (Appendix A) was distributed to the two national programs for the deaf and 50 two-year, liberal arts, vocational/technical colleges with career programs for hearing-impaired students that include a preparatory English language program. These colleges were identified by the 1988 College & Career Programs for Deaf Students and by educators who knew of the existence of such programs albeit unlisted (by oversight or error) by Programs. In addition, telephone contact was made with either directors, coordinators, teachers, counselors, or, in a few instances, management assistants to further discuss and explain the purpose of the information solicited in the questionnaire.

A second letter and questionnaire were sent three weeks after the first to those programs who had not responded as promised via telephone conversations. Additional notes of inquiry and telephone calls were employed in cases wherein
the information supplied was incomplete or needed clarification.

Forty-four responses out of 52 (85%) were received; however, 9 of these were unusable due to discontinuation of program, major revision of program, newness of program, or unavailability of appropriate contact person. As a result, 35 of the 44 responses (79.5%) were suitable for analysis.

Analysis of Data

The data received were analyzed according to the responses of each program director regarding the goals and objectives, instruction, instructional methods and materials, assessment and evaluation procedures, and problems and solutions relative to their programs. The following 25 tables present a complete analysis of the responses of the 35 participating programs. In each table, the first column lists the general responses made by the participating programs, and the following 35 columns indicate the specific programs making that response. Each table is preceded by a brief explanation of its contents.

Table 1. Goals & Objectives: General Goals-Academic

Table 1 lists five general academic goals reported by the participating programs. Of these, "preparation for further academic and degree coursework" is the most frequently reported academic goal. "Preparation for college
English courses" is the second most indicated goal, with "preparation for mainstream developmental reading and writing courses" a close third. One mention is made of the goals of "developing analytic and problem-solving skills" and "developing English skills for other media and computer use.

(See Table 1, next page.)
### GOALS & OBJECTIVES: GENERAL GOALS

#### Academic Goals

<table>
<thead>
<tr>
<th>GOALS</th>
<th>PROGRAMS</th>
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<tr>
<td>Prepare for Academic/Degree Coursework [24]</td>
<td>X X X X X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Prepare for College English Courses [15]</td>
<td>X X X X X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Develop Analytic/Problem-Solving Skills [1]</td>
<td>X</td>
</tr>
<tr>
<td>Develop English Skills for Computer Use [1]</td>
<td>X</td>
</tr>
</tbody>
</table>
Table 2. Goals & Objectives: General Goals—Vocational

Table 2 lists three vocational goals. "The improvement of English skills for job and career performance" is the most often cited vocational goal. The goals of "developing attainable vocational and career goals" and "enhancing job and career opportunities," while closely related, are far less frequently mentioned.

(See Table 2, next page.)
### TABLE 2

**GOALS & OBJECTIVES: GENERAL GOALS**

**Vocational Goals**

| GOALS                                                                 | PROGRAMS 1 | PROGRAMS 2 | PROGRAMS 3 | PROGRAMS 4 | PROGRAMS 5 | PROGRAMS 6 | PROGRAMS 7 | PROGRAMS 8 | PROGRAMS 9 | PROGRAMS 10 | PROGRAMS 11 | PROGRAMS 12 | PROGRAMS 13 | PROGRAMS 14 | PROGRAMS 15 | PROGRAMS 16 | PROGRAMS 17 | PROGRAMS 18 | PROGRAMS 19 | PROGRAMS 20 | PROGRAMS 21 | PROGRAMS 22 | PROGRAMS 23 | PROGRAMS 24 | PROGRAMS 25 | PROGRAMS 26 | PROGRAMS 27 | PROGRAMS 28 | PROGRAMS 29 | PROGRAMS 30 | PROGRAMS 31 | PROGRAMS 32 | PROGRAMS 33 | PROGRAMS 34 | PROGRAMS 35 |
|-----------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Improve English Language Skills for Job/Career [7]                   | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           | X           |
| Develop Attainable Vocational/Career Goals [2]                       |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| Enhance Job/Career Opportunities [1]                                 |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
Table 3. Goals & Objectives: General Goals-Personal

Table 3 lists four personal goals. The goal of "acquiring independence and improving the quality of life" is the most often reported goal. "The recognition of self-worth via the pursuance of lifelong learning" is indicated as a personal goal in several programs. The goals of "developing a positive attitude toward English" and "learning to feel comfortable among hearing classmates" are mentioned by one program.

(See Table 3, next page).
<table>
<thead>
<tr>
<th>GOALS</th>
<th>PROGRAMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquire Independence and Improve Quality of Life [9]</td>
<td>X X X X X X X</td>
</tr>
<tr>
<td>Develop a Positive Attitude Toward English [1]</td>
<td>X X</td>
</tr>
<tr>
<td>Learn to Feel Comfortable Among Hearing Classmates [1]</td>
<td>X X</td>
</tr>
</tbody>
</table>

**TABLE 3**

GOALS & OBJECTIVES: GENERAL GOALS

Personal Goals
Table 4. Goals & Objectives: General-Bilingual/Bicultural

Table 4 lists four bilingual/bicultural goals. Three of these specifically concern "the use of American Sign Language (ASL) as an instrument to improve English language skills and promote biculturalism." A related goal is "the exploration of both the hearing and deaf communities" as an avenue to promote biculturalism.

(See Table 4, next page.)
<table>
<thead>
<tr>
<th>GOALS</th>
<th>PROGRAMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Validate ASL and Use It to Increase Exposure to English [4]</td>
<td>X</td>
</tr>
<tr>
<td>Transfer ASL into English Language Skills for Job/Career/Life [3]</td>
<td>X X</td>
</tr>
<tr>
<td>Increase Knowledge of and Exposure to both Languages – ASL-English [3]</td>
<td>X X X</td>
</tr>
<tr>
<td>Promote Biculturalism via Exploration of both the Hearing and the Deaf Communities [3]</td>
<td>X X X</td>
</tr>
</tbody>
</table>
Table 5. Goals & Objectives: Reading Objectives

Table 5 lists seven specific reading objectives. Of these seven, "increasing vocabulary" and "improving reading comprehension skills" are the most frequently reported. "Organizing information for study purposes" is the third most indicated objective, followed by "using critical reasoning skills to interpret and evaluate reading material." The next cited objectives are "becoming familiar with a wide variety of reading materials" and "recognizing and stating a writer's purpose and point of view." "Increasing reading rate" is the least mentioned of the reported reading objectives.

(See Table 5, next page.)
TABLE 5
GOALS & OBJECTIVES

Reading Objectives

<table>
<thead>
<tr>
<th>OBJECTIVES</th>
<th>PROGRAMS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30  31  32  33  34  35</td>
</tr>
<tr>
<td>Increase Vocabulary [13]</td>
<td>X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X</td>
</tr>
<tr>
<td>Increase Comprehension Skills [12]</td>
<td>X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X</td>
</tr>
<tr>
<td>Organize Information for Study Purposes [8]</td>
<td>X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X</td>
</tr>
<tr>
<td>Use Critical Reasoning Skills to Interpret and Evaluate [7]</td>
<td>X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X</td>
</tr>
<tr>
<td>Become Familiar with a Wide Variety of Printed Formats [5]</td>
<td>X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X</td>
</tr>
<tr>
<td>Recognize Writer's Purpose and Point of View [4]</td>
<td>X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X</td>
</tr>
<tr>
<td>Increase Reading Rate [3]</td>
<td>X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X</td>
</tr>
</tbody>
</table>
Table 6. Goals & Objectives: Writing Objectives

Table 6 lists six specific writing objectives. Two of these are equal in frequency of mention: "learning/reviewing English grammar, syntax, sentence structure, and punctuation"; and "developing English composition skills." Closely following is the objective of "practicing various academic and personal writing tasks." Several programs specify "improving vocabulary and spelling skills" as an objective. Two programs recommend "the learning of English structure through ASL structure." One program cites the objective of "enhancing the enjoyment of writing English," and one program cites the objective of "learning word-processing on the computer."

(See Table 6, next page.)
# GOALS & OBJECTIVES

## Writing Objectives

<table>
<thead>
<tr>
<th>OBJECTIVES</th>
<th>PROGRAMS</th>
</tr>
</thead>
</table>
Table 7. Instruction: Degrees-Levels Specified

Table 7 lists the degrees held by instructional staffs. Four of these degrees are Ph.D.s, three with an emphasis in Linguistics and one unspecified. Forty-one are Master's degrees with a wide variety of emphases, the most common of which is Deaf Education, with English and Special Education following. Five degrees are unspecified, and the remaining emphases are mentioned once, twice, or three times.

(See Table 7, next page.)
### TABLE 7

**INSTRUCTION**

Degrees — Level Specified

| DEGREES                  | PROGRAMS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
|--------------------------|----------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                          | Psycho-Linguistics [1] |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
|                          | Applied Linguistics [1] |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
|                          | Unspecified [1] |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
|                          | English [7] |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
|                          | Special Education [6] |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
|                          | Unspecified [5] |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
|                          | ESL [3] |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
| Admin. Supervision [2]   |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
|                          | Education [1] |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
|                          | Counseling [1] |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
|                          | Reading [1] |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
| Adult Education [1]      |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
|                          | Psychology [1] |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
|                          | Speech [1] |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
| Cultural Anth./Ling. [1] |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
Table 8. Instruction: Degrees-Levels Specified/Unspecified

Table 8 lists four Bachelor's degrees, two Associate of Arts degrees, and five degrees with unspecified levels. Of those degrees specifying an emphasis, the majority indicates Deaf Education, Special Education, and English.

(See Table 8, next page.)
<table>
<thead>
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<th>DEGREES</th>
<th>PROGRAMS</th>
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</table>
Table 9. Instruction: Credentials

Table 9 lists three other instructional staff credentials. A Community College Credential in Special/Deaf Education and Interpreter Certification are both reported three times; a License in Speech Pathology/Audiometry is reported once.

(See Table 9, next page.)
### TABLE 9

**INSTRUCTION**

Other Credentials

<table>
<thead>
<tr>
<th>CREDENTIALS</th>
<th>PROGRAMS</th>
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<td>Community College Credential: Special/Deaf Education [3]</td>
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</tr>
<tr>
<td>Interpreter Certification [3]</td>
<td></td>
</tr>
<tr>
<td>License in Speech Pathology/Audiometry [1]</td>
<td></td>
</tr>
</tbody>
</table>

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| X | X | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|   | X |   | X | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

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Table 10. **Instruction: Training/Experience**

Table 10 lists 10 areas of non-degreed, non-certified training and experience represented by instructional staffs. Seven programs report proficiency in some type/method of sign language. English Second Language (ESL) training is mentioned twice, and other training/experience includes work with the multihandicapped, experience in deaf adult education and in the deaf cultural community, and National Leadership Training. Two programs are staffed by deaf instructors.

(See Table 10, next page.)
TABLE 10

INSTRUCTION

Training/Experience

<table>
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<th>TYPE</th>
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<tbody>
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<td>Adult Deaf Educational Experience [1]</td>
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<td>Deaf Cultural Community Experience [1]</td>
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<tr>
<td>National Leadership Training [1]</td>
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<tr>
<td>Deaf Instructor [2]</td>
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</table>
Tables 11 & 12. Instructional Methods

Tables 11 & 12 list 16 different instructional methods used by the participating programs. Traditional classroom lecture/discussion and tutoring by instructor are the most frequently reported instructional methods. Writing labs, both with/without computers, and classroom instruction utilizing grouping are the next most often cited methods. Tutoring by peers and classroom instruction utilizing computers follow these methods in frequency of use. Reading labs are mentioned twice.

A number of other instructional methods are variously reported, eight of which are specified and five of which are not. The legend and percentage categories at the bottom of each table indicate the estimated amount of time spent in each instructional endeavor.

(See Tables 11 & 12, next two pages.)
# TABLE 11

**INSTRUCTIONAL METHODS**

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</tr>
<tr>
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</tr>
<tr>
<td>Writing Lab with/without Computers [21]</td>
<td>☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉ ☉</td>
</tr>
<tr>
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</tr>
<tr>
<td>Reading Lab [2]</td>
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21-30% = ☉
31-40% = ☉
41-50% = ☉
51-60% = ☉
61-70% = ☉
71-80% = ☉
81-90% = ☉
91-100% = ☉

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Note: The table represents the percentage distribution of various instructional methods across different programs.
### TABLE 12

**INSTRUCTIONAL METHODS**

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<th>METHODS</th>
<th>PROGRAMS</th>
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<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35</td>
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<tr>
<td>Sustained Silent Reading [2]</td>
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<tr>
<td>Peer Discussions [2]</td>
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<tr>
<td>Individual Instruction Contracts [2]</td>
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<td>ASL/ESL Comparison Model [1]</td>
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<td>Field Trips [1]</td>
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#### Classifications

- **0-10% = §**
- **11-20% = §**
- **21-30% = †**
- **31-40% = †**
- **41-50% = †**
- **51-60% = #**
- **61-70% = #**
- **71-80% = #**
- **81-90% = #**
- **91-100% = †**

#### Other Programs

- **UNSPECIFIED**
  - 0-10% — 5
  - 11-20% — 1
  - 21-30% — 1
  - 31-40% — 1
  - 41-50% — 1

- **OVERHEAD PROJECTORS**
  - 0-10% — 1
  - 11-20% — 1
  - 21-30% — 1

- **SILENT READING**
  - 0-10% — 1
  - 11-20% — 1
  - 21-30% — 1

- **PEER DISCUSSION**
  - 0-10% — 1
  - 11-20% — 1
  - 21-30% — 1

- **FIELD TRIPS**
  - 0-10% — 1

- **ASL/ESL MODEL**
  - 31-40% — 1

- **SIGN LANGUAGE LAB**
  - 21-30% — 1

- **STUDENT CONTRACTS**
  - 0-10% — 1
  - 91-100% — 1
Tables 13 & 14, Instructional Materials

Tables 13 & 14 list 11 different types of instructional materials. The use of textbooks and other publications for instruction is reported by 34 and 28 programs respectively. Most of these indicate moderate usage. Teacher-made drill/practice materials and writing assignments are used by 31 and 29 programs respectively, and most of these indicate heavy usage. Published computer software is used by 21 programs, the majority of these moderately.

Teacher-designed computer software is used by 10 programs, most of them lightly. The use of "other" instructional materials is indicated by 16 programs. Of these, captioned films and videos and pictures and transparencies are each reported by five programs. Three "other" are unspecified; three specified "other" are each mentioned once.

(See Tables 13 & 14, next two pages.)
### TABLE 13

**INSTRUCTIONAL MATERIALS**

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<td>Teacher-Made Drill/Practice Materials [31]</td>
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H = heavy  M = moderate  L = light
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<td>OTHER INSTRUCTIONAL MATERIALS [15]</td>
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<td>Unspecified [3]</td>
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<td>Picto-Cabulary [1]</td>
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</table>

H = heavy  M = moderate  L = light
Tables 15, 16, & 17. Assessment and Evaluation

Tables 15, 16, & 17 list the different assessment and evaluation instruments used by the respondent programs. Of these, 19 are title-specified, published tests. The Stanford Achievement Test, Special Edition for Hearing-Impaired Students (SAT-HI) and the Nelson-Denny Reading Test are the most frequently used. The ASSET, the Test of Adult Basic Education (TABE), Multiple Assessment Programs and Services (MAPS), Structured Test of English Proficiency (STEP), the Degrees of Reading Power (DRP), and the Gates-MacGinitie Reading Test are mentioned by a few of the programs. The remaining 12 published tests are utilized by one program each.

Several programs reflect the use of unspecified published testing materials, the majority of these being textbook unit/chapter tests. Two programs specify the use of computer software self-mastery tests. Included in all 35 programs are institution/teacher designed writing samples and pre-/post tests.

(See Tables 15, 16, & 17, next three pages.)
**TABLE 15**

ASSESSMENT/EVALUATION

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TABLE 17
ASSESSMENT/EVALUATION
Tables 18-24. Major Problems and Solutions

Tables 18-24 list eight major problems identified and their suggested solutions. The most frequently encountered problem is "the lack of fundamental writing skills." "Drill/practice" and "a strong ASL/ESL approach" are the most frequently specified solutions, with "practicing sentence types and patterns" and "practicing different writing tasks" the next most often indicated. The remaining four suggested solutions, "use practical everyday-life materials," "practice combining sentence types and patterns," "provide frequent individual attention," and "share student opinions on corrected papers" are each mentioned by three programs.

"Deficient vocabulary" is the second most frequently encountered problem, and "drill/practice" is the most common solution. Suggested by a few programs are "the translation of ASL vocabulary into English vocabulary," "the use of quantities of diverse reading materials," and "the use of visual aids," with "frequent quizzes" mentioned once.

The next most encountered problem is "a negative attitude toward English." "Providing a wide variety of high-interest activities" is the most common solution. "Stressing the need for English skills in career and everyday life," "providing much individual attention," and "furnishing deaf role models" and "providing much individual attention" are each designated by two programs.
"Lack of confidence, motivation, and educational goals" is the next specified problem. "Emphasizing the necessity of lifelong learning" is the most common solution. "Using high-interest materials," "connecting education to 'real world' experiences, and "using a bilingual/bicultural philosophy in teaching English" follow. Solutions cited by a few programs are "carefully controlling the difficulty levels of materials" and "providing frequent individual attention." "Using creative question exercises to stimulate thinking," "preparing classes carefully," and "using humor frequently" are each mentioned once.

"Inadequate reading comprehension" represents the next most frequently encountered problem. Solutions range from "using quantities of easily readable, high-interest material" (the majority of programs) to "concentrating on vocabulary in context" and "utilizing many and varied comprehension questions."

"Lack of background knowledge" and "lack of instructor time to remediate all the problems" are the next reported problems. Solutions to the first include "relating ideas and concepts to students' individual lives" and "furnishing background knowledge in various inventive ways." Solutions to the latter include "stressing one skill at a time" and "not expecting perfect results for efforts expended."
The problem of "poor study habits" is specified by two programs. The single, common solution is "to give assignments and directions clearly and methodically."

(See Tables 18-24, next seven pages.)
### TABLE 18

**MAJOR PROBLEMS/SOLUTIONS**

| PROBLEMS/   | PROGRAMS |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| SOLUTIONS  |          |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|            |          |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Lack of Fundamental Writing Skills [23] | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Drill/Practice [12] | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Adopt Strong ASL/ESL Approach [8] | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Practice Writing Sentence Types/Patterns [6] | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Practice Various Writing Tasks [5] | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Practice Combining Sentence Types/Patterns [3] | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
## TABLE 19

### MAJOR PROBLEMS/SOLUTIONS

| PROBLEMS/ SOLUTIONS | PROGRAMS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| Frequent Individual Instruction [3] | | | | | | | X | | | | | | | | | X | | | X | | X | X | | | | | | | | | | | | | | | |
| PROBLEM | X X X X | X X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Deficient Vocabulary [11] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SOLUTIONS | | X | | | | | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Drill/Practice [6] | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Translate ASL into English Vocabulary [3] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Use a Variety of Visual Aids [3] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Frequent Quizzes [1] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | | | | | | | | | | | |
# Table 20

## Major Problems/Solutions

| Problems/Solutions | Programs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
|--------------------|----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| **Problem**        |          |   |   |   |   |   |   |   |   |   | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| Negative Attitude  |          |   |   |   |   |   |   |   |   |   | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| Toward English    |          |   |   |   |   |   |   |   |   |   | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| [10]               |          |   |   |   |   |   |   |   |   |   | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| Solutions          |          |   |   |   |   |   |   |   |   |   | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| Provide a Variety  |          |   |   |   |   |   |   |   |   |   | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| of High-Interest   |          |   |   |   |   |   |   |   |   |   | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| Activities [6]     |          |   |   |   |   |   |   |   |   |   | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| Stress Need for    |          |   |   |   |   |   |   |   |   |   | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| English Skills in  |          |   |   |   |   |   |   |   |   |   | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| Career and Everyday |          |   |   |   |   |   |   |   |   |   | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| Life [3]           |          |   |   |   |   |   |   |   |   |   | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| Foster Desire to   |          |   |   |   |   |   |   |   |   |   | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| Learn Via Deaf     |          |   |   |   |   |   |   |   |   |   | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| Role Models [2]    |          |   |   |   |   |   |   |   |   |   | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| Provide Frequent   |          |   |   |   |   |   |   |   |   |   | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |
| Individual Attention [2] |   |   |   |   |   |   |   |   |   |   | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |

**Note:** The table indicates which programs address each problem. X marks the programs where the solution is implemented.
### TABLE 21

**MAJOR PROBLEMS/SOLUTIONS**

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<td>Furnish Background Information in Various Inventive Ways [3]</td>
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**TABLE 23**

**MAJOR PROBLEMS/SOLUTIONS**
# TABLE 24
## MAJOR PROBLEMS/SOLUTIONS

| PROBLEMS/SOLUTIONS | PROGRAMS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
|---------------------|----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| **PROBLEM**         |          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Lack of Instructor  |          | X | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Time to Remediate   |          |   |   |   |   |   |   | X | X | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| All Problems [6]    |          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| **SOLUTIONS**       |          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Stress One Skill at |          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| a Time [3]          |          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| **DO NOT**          |          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Expect Perfect      |          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Results [3]         |          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| **PROBLEM**         |          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Poor Study Habits   |          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| [2]                |          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| **SOLUTION**        |          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Give Assignments    |          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| and Directions      |          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Clearly and         |          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Methodically [2]    |          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|                     |          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   

*Note: X indicates the presence of the problem/solution in that program.*
Table 25. Materials and Information

Table 25 lists the various materials and information furnished by the participating programs (See Appendix E). Program brochures and course outlines account for the highest number of informative materials received. Drill/practice sheets, institution/teacher-designed tests and quizzes, and reading and writing assignments are the next most plentiful.

Also variously provided were writing samples, materials catalogs, an instructor's handbook, a student learning contract, and a copy of the Silvaroli Classroom Reading Inventory were provided by one program each. Eight programs made no response to the final request.

(See Table 25, next page.)
# TABLE 25

**MATERIALS AND INFORMATION**

<table>
<thead>
<tr>
<th>MATERIALS/ INFORMATION</th>
<th>PROGRAMS</th>
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<tr>
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<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35</td>
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<td>Course Outlines [20]</td>
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<td>Brochures [17]</td>
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<td>Reading/Writing Assignments [5]</td>
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<td>Writing Samples [2]</td>
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<td>Instructor Handbook [1]</td>
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<td>Student Learning Contract [1]</td>
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<tr>
<td>Classroom Reading Inventory [1]</td>
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<tr>
<td>No Response [8]</td>
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**Notes:**
- X indicates the presence of the material or information in the corresponding program.
- No response indicates the lack of response from the program.

**References:**
- Course Outlines [20]
- Brochures [17]
- Drill/Practice Materials [11]
- Teacher-Designed Tests/Quizzes [11]
- Reading/Writing Assignments [5]
- Writing Samples [2]
- Materials Catalogs [2]
- Instructor Handbook [1]
- Student Learning Contract [1]
- Classroom Reading Inventory [1]
- No Response [8]
Summary

The analysis presented in the 25 tables of this chapter represents a composite picture of the 35 preparatory English language programs participating in this study. Many of the programs manifest marked differences in their goals and objectives, instruction, methods and materials, assessment and evaluation, and problems and solutions. Conversely, a number demonstrate significant similarities in all of these areas. Furthermore, many of the participating programs provided thoughtfully answered, readily understandable, thorough responses along with helpful suggestions and abundant materials. Others, as seen in this analysis, were not as thorough nor helpful. Chapter 4 of this study presents a synthesis and discussion of the data analyzed in this chapter.
CHAPTER 4
SYNTHESIS AND DISCUSSION

Introduction

A synthesis and discussion of the goals and objectives, practices and procedures, and problems and solutions as reported by the programs researched in this study are presented in this chapter. The purpose of this synthesis and discussion is to develop a viable set of recommendations for an English language program for hearing-impaired college students for Clark County Community College and concerned colleges that do not presently offer such a program.

Goals and Objectives

The goals and objectives are categorized into general goals and specific objectives in order to reflect a composite picture. General goals are further grouped into academic, vocational, personal, and bilingual/bicultural goals, as their natures dictate. Objectives are divided into specific reading and writing objectives.

General Goals

Academic Goals

The two most highly regarded academic goals reported are "to prepare for further academic and degree coursework"
and "to prepare for college English courses." Clearly, the aim of a great many of the preparatory English language programs intend hearing-impaired college students to enter the mainstream of academic life and eventually complete a degree. However, the third most important goal, "to prepare for mainstream developmental reading and writing courses," reflects that a considerable number of programs anticipate the necessity or advisability of long-term English study prior to entering college academic courses. A developmental reading/writing program will provide, at the least, a year's further study and practice. Two goals normally a priority in English courses, "to develop analytic and problem-solving skills" and "to develop English skills for computer use," are singled out by only one program. This low priority is initially surprising, as these skills are highly advantageous for college students, not only as they complete their college coursework, but also thereafter when they embark upon their professional lives. However, analytic and problem-solving skills are sophisticated cognitive abilities, and computer skills preclude at least adequate English skills. It appears that a majority of the preparatory programs find they must concentrate almost exclusively on the more expedient goals of preparing students to succeed in college English and other academic courses.
Vocational Goals

Relatively few programs identify vocational goals. This may indicate that the goals pertaining to helping students survive and succeed in the college academic arena are the most immediate and important ones. Among the vocational goals cited, the most valued is the most expedient, "to improve English skills for job and career performance." The priority of this goal is understandable. Competing for, securing, and performing well in job and career in the hearing world demands a working command of the language of that world. "To develop attainable vocational and career goals" is the second most highly regarded vocational goal, although indicated by only a few programs. It is somewhat surprising that more importance is not placed on this goal as it involves motivation. Hearing-impaired college students need to be constantly reassured that a career and an independent life is within their grasp, and that the first step to that independence is effective communication within the hearing world.

A third vocational goal is "to enhance job and career opportunities." English language programs must encourage hearing-impaired students to look forward to a more rewarding career than merely a menial job, and further, to anticipate upward mobility in the world of work and responsibility. It is a goal to be loudly applauded. Yet, because it is a relatively lofty goal when compared with
those dealing with motivation and survival, it is not considered as immediate.

Personal Goals

In the affective domain of educational endeavor, four personal goals are observed. Among these, the most highly regarded is "to acquire independence and improve the quality of life." This is obviously a desirable personal goal and its priority is understandable, even expected. It is a goal to which all human beings aspire, but it is especially precious to the handicapped. "To recognize self-worth and pursue lifelong learning" is another notable goal. Mastering the English language is an awesome achievement for the hearing-impaired individual, certain to increase self-esteem and enhance awareness of the benefits of lifelong learning.

Two personal goals are reported by one program respectively—"to develop a positive attitude toward English" and "to learn to feel comfortable among hearing classmates." Both of these are laudable goals, and their minimal mention is somewhat puzzling. As seen in the review of the literature in Chapter 2 of this study, the negative attitude toward English shared by many deaf people is a significant impediment in their learning of the language. It is therefore curious that this personal goal, not really a lofty or extraneous one, is of such low priority among the
respondent programs. Likewise, because hearing-impaired students, like most students, are acutely conscious of the social life of their college, helping them feel comfortable and accepted among their peers is a desirable goal for a program serving them.

Bilingual/Bicultural Goals

Four bilingual/bicultural goals are described, all similar in principle yet slightly different in emphasis. The most frequently described is "to validate American Sign Language (ASL) and use it to increase exposure to English," an extremely commendable goal. The literature review of this study delineates the strife-ridden history of the manual/oral controversy in the education of the deaf. It is of paramount importance to reassure hearing-impaired students of the worth and dignity of their first language. Then and only then can it be practically and fruitfully used to expose them to and gain their acceptance of English.

A second notable goal, stated by three programs, is "to transfer ASL into English language skills for the benefit of job, career, and life." This goal is compatible if not coexistent with similar vocational and personal goals. English skills are intrinsic to the deaf individual's personal and professional well-being in the hearing world. This goal indicates that the most effective way to attain these critical skills is through their first language, ASL.
The third goal, "to increase knowledge of and exposure to both languages, ASL and English," is slightly but sufficiently different from the second goal. This goal emphasizes the worth and practicality of both languages and substantiates the fact that the hearing-impaired individual is truly a bilingual being. The goal "to promote biculturalism through exploration of both the hearing and deaf communities" is by far the broadest and most ambitious of this set of goals. This goal not only acknowledges the fact that the deaf person is bilingual; it further suggests that the fully-functioning deaf individual is a legitimate and complete citizen of two worlds—-the hearing as well as the deaf.

Objectives

Reading Objectives

Two basic reading objectives are the most frequently cited: "to increase vocabulary" and "to improve comprehension skills." This is logical and expected as these are the essential skills to be mastered for the mere understanding of reading material. The next most often stated objective, "to organize information for study purposes," is likewise a basic-skill objective, albeit a somewhat broader one. It recognizes the need for mastery of reading skills in order to assimilate and organize
information in textbooks, a necessity in the life of any college student.

"Use critical reasoning skills to interpret and evaluate," although a sophisticated cognitive-domain activity, is relatively high on the list of comparative objectives, cited by seven programs. It is surprising that this ambitious objective is rated somewhat higher than the more practical skill of recognizing and stating the writer's purpose and point of view. This is slightly inconsistent with the tendency of preparatory English hearing-impaired programs to stress fundamentals.

Also unexpected is the relatively slight mention of the objective, "to become familiar with a wide variety of printed formats." It is almost universally true that deaf students do not like to read, understandable given the arduousness of the task. Thus, an extensive and varied menu of materials should encourage students to partake of and enjoy reading rather than avoid and dislike it. The least cited reading objective is one which is ordinarily of high priority in college reading programs, "to increase reading rate." College students are faced with large amounts of reading material, so an efficient reading rate is certainly an advantageous skill. However, because the hearing-impaired reader must surmount so many formidable barriers to mastering fundamental skills, there is not much wisdom in concentrating on the least attainable.
Writing Objectives

Six writing objectives are identified. Of these, two are singled out as the most salient: "to learn or review English grammar, syntax, punctuation, and sentence structure;" and "to develop the composition skills of prewriting, writing, editing, proofreading, and revising." These two objectives are quite obviously aimed at developing the fundamental skills of written English. The third objective, "to practice various writing tasks," is more ambitious and comprehensive and logically follows from the first two basic objectives.

The next objective, "to improve vocabulary and spelling skills," again speaks to rudimentary skills. Critical as these skills are, it is understandable that they receive less emphasis than the first three. Spelling and vocabulary are ongoing concerns that are continually monitored as part of the process of developing effective written expression. The objective of "learning English structure through ASL structure" is mentioned by two programs. This is a bit difficult to understand as a comparison of ASL and English figures prominently in several programs' general goals. A comparison of the structures of the two languages would appear to be a viable writing objective. The last two objectives, "to enhance enjoyment of writing English" and "to learn a word-processing program," are represented as far less important than the others. Normally, these two
objectives are of high priority in a college writing program. Writing is the natural conduit to an awareness and appreciation of language; and in our brave new technological world, the computer is the ultimate tool, time saver and liberator. However, for the hearing-impaired student writer, such esoteric endeavors are marginally akin to frivolity. Fundamentals must necessarily be addressed and mastered before all.

Instruction

Degrees--Levels Specified

The respondent programs indicate the gambit of degrees among their instructional staffs: Ph.D.s, Master's, Bachelor's, and Associate of Arts Degrees. Of the four Doctorates, three are in the area of Linguistics. One is unspecified. Of the 41 Master's degrees, 17 are in the areas of Deaf or Special Education and 13 are in the areas of English, ESL, Reading, Speech, and Linguistics. Two of the four Bachelor's degrees indicate emphases in Special Education and English. Of all the degrees reported, 35 of 51 (69%) are in areas specifically germane to language and the educationally handicapped.

Degrees--Levels Unspecified

Several programs report degreed staffs but neglect to specify the level--Ph.D., Master's, Bachelor's, or AA. The
emphases of these unspecified degrees, however, are indicated: all are in the areas of Special or Deaf Education, English, Reading, and Linguistics. Clearly, the degreed staffs of the these programs are typically highly-trained and consummately professional.

Other Credentials

Credentials other than specified degrees are a Community College Credential in Special/Deaf Education; Interpreter Certification; and a License in Speech Pathology/Audiometry. Similar to the degreed instructional staffs, individuals holding these credentials are appropriately qualified to work in the areas of language and the educationally handicapped.

Training/Experience

Nine areas of training/experience are identified. Of these, seven specify staff proficiency in some method or type of sign language. At first glance, seven may appear to be a low number; however, the various degrees and credentials in Deaf and Special Education include sign language proficiency. Other areas of training/experience include multi-handicapped training and experience in deaf adult education and the deaf cultural community. Two programs indicate deaf instructors. Staff training and experience, like staff degrees and credentials, exhibit
eminent qualification in the areas of language and the educationally handicapped.

Instructional Methods

Fifteen different instructional methods are represented. A large majority of the programs cited in this study employ "traditional classroom lecture and discussion." At first, this fact appears surprising because lecture and discussion is the primary method used with hearing students. However, when an instructor is proficient in sign or a non-signing instructor is teamed with a proficient interpreter, lecture and discussion classes are conducted much the same as with hearing students.

"Tutoring by the instructor" is the second most popular instructional method. A one-to-one, teacher-student ratio is obviously the very best of teaching/learning situations; it is especially beneficial to students who need extra consideration and attention, such as the hearing impaired.

"Classroom instruction with grouping" is the third most used method. This, too, is understandably an effective instructional method with hearing-impaired students. Grouping accommodates diverse abilities, common among all students but exceptionally prevalent among hearing-impaired students.

More than 50% (21 of 35) of the programs report using "writing labs, both with and without computers," as a
supplement to classroom instruction. This reflects the current norm for most college writing programs; writing lab practice is a beneficial activity for all students striving to improve their writing skills. And because manual/visual rather than aural/oral skills govern the computer, its instructional value in teaching the deaf is readily comprehensible.

"Peer tutoring" is the next instructional method cited. This is somewhat surprising as peer tutoring is probably the most controversial instructional method used in any educational program. It is difficult to monitor such a method for content, accuracy, consistency—just about any and all variables. It is perhaps an effective method with hearing-impaired students because of its emotional value: students with mutual learning difficulties encouraging, helping, and genuinely caring for each other.

"Sustained silent reading" as an instructional method is reported enthusiastically by two programs. Twenty minutes at the beginning or end of a class period affords a suitable arena for this activity. This is a potentially effective way to provide non-threatening exposure and practice and to promote enjoyment of personal reading.

Mentioned by two programs respectively are "peer discussion" and "individual student contracts." Peer discussion of papers, like peer tutoring, probably works well in the affective domain. Student/teacher contractual
agreements require a fairly high level of sophistication and commitment on the part of the student. Deaf students, because of their recognized difficulty in mastering even basic English skills, are not as likely as hearing students to easily realize preordained requisites. It is dubious, then, that this method would be highly effective with the majority of hearing-impaired students.

Variously reported by one program each are "field trips," an American Sign Language/English Second Language (ASL/ESL) comparison model, and sign language lab. Most cities encompass museums, historical landmarks, and other educationally valid institutions, so the first is practical, interesting, and most likely fun for the students. The latter two, certainly commendable instructional methods, require in-depth expertise in sign language.

Instructional Materials

Eleven different types of instructional materials are reported. Of these, "textbooks" are used by the largest majority, 34 of the 35 programs. Although many of the professionals working in these programs question the appropriateness of available textbooks, they are still the educational tool of choice. Possible explanations for this is the plethora of textbooks available to the educator; and they are, in practice, the most convenient and acceptable of educational materials.
"Other publications—periodicals, pamphlets, journals, biographies, novels, and so forth"—figure prominently in instructional use. Such publications are usually special- and high-interest types, so it is possible to tailor them to individual classes and students.

"Teacher-made drill/practice materials" and "writing assignments" are of very high priority in instruction. The advantages of both are obvious: the instructor has complete control over the intent, content, and expected results of the instructional materials; and materials can be easily tailored to the needs and abilities of the individual student.

"Published computer software" is the next most favored instructional aid, with teacher-designed software rated considerably lower. Presently, copious educational software can be found in literally hundreds of software catalogs, much of it admirably high in quality. And it is no mystery that published educational software is more popular with instructors: a good deal of time, expertise, and expense is required to design and produce teacher-made software.

Of the remaining instructional materials, the slight mention of "captioned films and videotapes" is surprising. Visual aids are an obvious "natural" in the education of the deaf. One explanation for the disinterest in captioned films and videotapes may be lack of quality programs. Another may be the relative high cost of purchasing film and
videotape when compared with print. "Overhead transparencies" are likewise used relatively little. Again, this is a visual medium which apparently would be of significant value in a hearing-impaired program. One explanation may be lack of instructor time to prepare and update materials. Of the remaining materials mentioned, two are also visual aids—"cartoons" and "picto-cabulary."

Assessment and Evaluation

Published Tests

Nineteen different published tests are used for assessment and evaluation by the participating programs. Of these, The Stanford Achievement Test, Special Edition for Hearing-Impaired Students (SAT-HI), and the Nelson-Denny Reading Test are the most frequently cited (seven programs each). The SAT-HI is an adaptation of the 1973 edition of the Stanford Achievement Test (SAT). It was adapted by the Office of Demographic Studies (now the Center for Assessment and Demographic Studies) at Gallaudet University. The results of the SAT-HI may be used as a measure of academic achievement for the purposes of school and grade placement, remedial academic services, and prescriptive planning. The SAT-HI is not reviewed in The Mental Measurements Yearbooks. The 1973 edition of the SAT is reviewed in the eighth edition of the Yearbook, and reviewers consider it an excellent achievement test. The SAT-HI was designed
specifically for hearing-impaired students and therefore is an appropriate and recommended instrument.

The Nelson-Denny is likewise a widely used and time-honored test, normed on a hearing student population. It is a fairly rigorous test of reading abilities, more suited for college students than for high school students. It is understandable, then, that some programs using this test indicate slight dissatisfaction because of its difficulty for the hearing-impaired student. The Nelson-Denny Reading Test is reviewed in The Eighth Mental Measurements Yearbook.

Another standard, norm-referenced instrument used by three programs is the ASSET. The ASSET is an American College Testing Program (ACT)-developed advising, course placement, and retention tool designed specifically to serve students entering two-year institutions. Introduced nationally in 1983, it is used in approximately one-third of the nation's two-year colleges. The ASSET is comprised of two levels, one designed to assess basic skills in writing, reading and mathematics while the second assesses advanced skills in mathematics. The ASSET, at least its first level, is generally considered less rigorous than the more widely used Scholastic Achievement Test and the California Achievement Test, so this explains its preference by educators of the hearing impaired. Because of its relative newness, neither descriptions nor reviews are available in The Mental Measurements Yearbooks or Tests in Print.
The Tests of Adult Basic Education (TABE), used by two programs, are essentially a reprint of the California Achievement Tests, 1970 edition. The assumption is that achievement batteries intended for grade school children can be usefully modified for adult basic education. However, the content of the tests is remote from adult life, and when used with adults, limitations are compounded to the point where misinterpretation is highly possible. Its usefulness with hearing-impaired college students is therefore questionable. The TABE is reviewed in The Eighth Mental Measurements Yearbook.

The Multiple Assessment Programs and Services (MAPS) of the College Board is used by two programs. It is designed to help colleges determine the placement levels and remediation requirements of incoming as well as continuing students. It provides data in the areas of remediation, placement, exemption, selection, instruction, guidance and counseling. It includes a biographical questionnaire and numerous tests from multiple testing services, adjustable to several levels of student ability. For this reason, it is considered a feasible instrument for use with hearing-impaired students. A description of the MAPS is available in Volume III of Tests in Print.

The Sequential Tests of Educational Progress (STEP), used by two programs, is a battery of nationalized standard achievement tests of skills and understandings that should
be a part of every well informed citizen. Its overall purpose is to evaluate student progress toward fulfilling the broad, general goals of education in academic areas. STEP is regarded as a superior battery with respect to certain technical characteristics, but its utility in providing educationally useful information is questionable, largely because of the time-consuming and difficult administration. Its appropriateness, then, for relatively small student populations such as the hearing impaired may also be doubtful. The STEP is reviewed in The Eighth Mental Measurements Yearbook.

The Degrees of Reading Power (DRP) and the Gates-MacGinitie Reading Tests are used by two programs. The DRP aims to measure reading effectiveness by how well an individual can perform "real life" reading tasks. Comprehension ratings directly link scores to the readability of a large body (over 2,000 titles) of text materials. The program consists of two central components: comprehension tests of nonfiction English prose and systematic readability data for instructional materials. The DRP is innovative and technologically advanced and is considered to be among the best conceived and carefully constructed measures of reading comprehension available. However, there are insufficient data available to make informed judgments about its utility for a hearing-impaired
student population. The DRP is reviewed in *The Ninth Mental Measurements Yearbook*.

The Gates-MacGinitie assesses three aspects of reading: speed and accuracy, vocabulary, and comprehension. The one major shortcoming of the Gates-MacGinitie is its inattention to certain subskills. College students must master not only literal comprehension but such interpretative comprehension abilities as making inferences, separating fact and opinion, and determining the writer's fairness and objectivity. Reviews of this test indicate these critical skills are not well assessed. The Gates-MacGinitie Reading Test is reviewed in *The Eighth Mental Measurements Yearbook*.

The remaining published tests are each used by one program, and several of these are notable. The Michigan Test of English Language Proficiency (MTELP) is a comprehensive examination, excellent in the area of English as a foreign or second language. Items are phrased in authentic, idiomatic American English, and the specific linguistic elements of English proficiency are targeted. Reading selections and accompanying items are well designed. It is considered a well-constructed test with a considerable grounding in empirical research—a recommended alternative to the ponderous Test of English as a Foreign Language (TOEFL). Because of its ESL orientation, the MTELP has obvious advantages in a hearing-impaired program. The MTELP is reviewed in *The Eighth Mental Measurements Yearbook*. 
The California Reading Test, a subtest of the California Achievement Tests, has been available to schools for about 45 years. Each revision has been, according to test critics and users alike, superior to the one preceding it. The California Reading Test is designed to measure, evaluate, and analyze reading achievement in terms of performance. The test features well-chosen content and an abundance of interpretative materials. With few exceptions, the California Reading Test is generally well conceived and well executed, one of the better tests of its kind. The CAT battery is reviewed in The Eighth Mental Measurements Yearbook.

The Woodcock Reading Mastery Test (WRMT), another reading test used by one program, is a carefully constructed series of individual reading tasks designed to be administered individually. The fundamental objective of the battery is to provide precise measures of reading for clinical or research purposes. The WRMT is not normed on a hearing-impaired population. In fact, two subtests require oral responses for phonetic analysis, and two subtests consist of very sophisticated language. The lack of hearing-impaired norms limits comparison and interpretation of results. The WRMT is reviewed in The Eighth Mental Measurements Yearbook.

The American College Testing-Career Planning Program (ACT-CPP) combines individual assessment measures of
interests, experiences, and abilities with guidance materials in career planning. The ability and interest scores are used to identify a number of career options for the student to consider. Each student is encouraged to explore a number of broad career possibilities by a series of exercises drawn from the guidance materials. The six ability tests are selected to assess both academic and nonacademic skills considered to be important in a variety of careers. The tests are normed on a national sample of hearing students, so their effectiveness in achieving the goal of self- and career-exploration with a hearing-impaired population is not guaranteed. The ACT-CPP is reviewed in The Eighth Mental Measurements Yearbook.

The Adult Performance Level Survey (APLS), published by the American College Testing Program, is designed for high school and adult students. It is a criterion-referenced battery, measuring functional literacy pertaining to community resources, occupational knowledge, consumer economics, health, government, and law. It also measures the skills of reading, writing, computation, and problem solving. Because there are no suggested standards of mastery, the APLS can be practically adapted to a hearing-impaired student population. The APLS is reviewed in The Eighth Mental Measurements Yearbook.

The Comparative Guidance and Placement Program (CGP), used by one program, is designed for entrants to
postsecondary institutions. The CGP consists of a battery of background, abilities, and interest measures which may be administered (full or modified program) at any time by participating colleges. The CGP represents a distinct advance in programs purporting to provide useful information to students attempting to make postsecondary educational or career decisions. It attempts to realistically relate individual student test performance to the probability of success in specific courses and curricula at specific postsecondary institutions. A second major benefit of the CGP is the potential to provide massive quantities of personal student data: attitudes, needs, and characteristics can be analyzed and reported for individual students. All of these attributes of the CGP speak to its potential usefulness with hearing-impaired students. The CGP is reviewed in The Eighth Mental Measurements Yearbook.

The Test of Syntactic Abilities (TSA) is designed specifically for profoundly and prelingually deaf students, ages 10-19. The test is based on a report of the theoretical formulations, procedures, major findings, and conclusions of a long-term research project on the syntactic structures of deaf children and youth. It consists of 20 subtests germane to the various syntactic structures especially difficult for deaf students. The TSA is of paramount interest to all those engaged in teaching language
to the hearing impaired. The TSA is described in detail in *The Ninth Mental Measurements Yearbook*.

The Objectives-Referenced Bank of Items and Tests (ORBIT), grades K-12 and adults, is used by one program. It is a customized bank of criterion-referenced tests covering up to 50 objectives locally chosen from a list of 335 objectives in 10 areas. Subtests are categorized according to grade level of the most difficult word in the subtest, so they are applicable to a wide variety of student ability. No norms exist; mastery is defined as at least three out of four items correct but can be adjusted otherwise as judgment and need dictate. For this reason, the ORBIT is a feasible instrument for use with hearing-impaired students. The ORBIT is reviewed in *The Eighth Mental Measurements Yearbook*.

The Silvaroli Classroom Reading Inventory (CRI), now in its 4th edition, is designed for elementary, middle, high-school, and adult students. It defines and measures independent, instructional, and frustration reading levels as well as hearing capacity level and word recognition and comprehension. No norms exist, so it may be adjusted according to instructor discretion, making it a useful instrument for hearing-impaired readers. An earlier edition of the CRI is reviewed in *The Eighth Mental Measurements Yearbook*. 
No information was furnished nor could be found on the remaining two published tests, The Barnell-Loft Spelling Test and the O'Brian Vocabulary Inventory.

**Unspecified Published Testing Materials**

Six programs report using the unit/chapter tests in their textbooks as assessment and evaluation materials. Although these textbook tests may vary in quality, they are convenient and generally closely adapted to the material studied. And, most instructors of the hearing impaired are experienced and proficient at rewriting materials to conform to student needs.

Two programs utilize computer software self-mastery tests. The slight usage of software testing materials is somewhat surprising. Many programs report employing computers in the classroom and in the writing lab and using both published and teacher-designed software. It appears that much of the computer work in these programs concentrates on actual writing tasks and supplemental, non-tested practice.

**Unpublished Testing Materials**

A resounding 35 programs indicate using institution/teacher-designed assessment and evaluation instruments. Regardless of the varied preference in standardized norm-referenced tests, all programs agree with the need for
their own in-house, pre- and post tests and writing samples. This indicates that most programs do not rely solely on the many standardized tests available, probably because, except for the SAT-HI and TSA, they are not adjusted to the hearing-impaired student. It may be concluded that teachers of the hearing impaired consider it injudicious to expend time and financial resources on the difficult task of developing standardized tests suited to that special population. It is obvious that at the present time, they have more faith in their own expertise, experience, and efforts in normative assessment and evaluation.

Major Problems and Solutions

Eight major problems are identified by the respondent programs along with various solutions. By far the most troublesome problem, reported by 23 of the 35 programs, is hearing-impaired students' "lack of fundamental writing skills." The most often proposed solution is "drill and practice," a tactic also widely used with hearing students for the remediation of basic skills.

The next solution is "to adopt a strong ASL/ESL approach." This approach, obviously, is directed specifically at the problems and abilities of hearing-impaired students. It involves using ASL as a first language in order to most effectively teach English as a second language.
A further suggested solution is "to practice the different English sentence types and patterns." Many grammarians recommend this approach and many teachers utilize it; others, indeed, ignore it. While it is true the sentence-patterns approach is not always effective with native speakers of English, it is usually helpful with foreign speakers of English, such as the hearing impaired.

Another recommended solution is "to practice various writing tasks." This, of course, is a crucial segment in all writing programs. College students need training for the many types of papers they must produce in their courses, and hearing-impaired writing programs are speaking to this need.

Another proposed solution, "to use practical everyday-life materials," is extremely important when dealing with hearing-impaired students. Their everyday lives are what they are the most comfortable and familiar with. Another practical solution is "to practice combining sentence types and patterns." Adequate sentence variety is a necessity for the production of satisfactory readable prose and certainly an asset to all writing styles.

Of the remaining solutions, undoubtedly, "frequent individual instruction," is critical in addressing the many writing problems of hearing-impaired students. The last mentioned solution is "to share student opinions of papers after the instructor's review and evaluation." This
requires students to pay in-depth attention to mutual writing problems and encourages them to be constructively critical and assertive. Shyness, unsureness, and lack of self-confidence are common traits among hearing-impaired students.

The second largest problem indicated by the programs is "deficient vocabulary," for which five different solutions are offered. The first is "drill/practice," again, a tactic almost universally used for basic-skills improvement. The next solution, "to translate ASL into English vocabulary for comparison/contrast and learning purposes," is aimed at the unique situation of hearing-impaired students. They use ASL vocabulary on a daily basis, and teaching the unknown via the known is a traditional teaching principle.

Another solution is "to use quantities of diverse reading materials." This is clearly a potentially effective way to expose hearing-impaired students to an abundance of vocabulary. The next solution, "to use a variety of visual aids," is rather an obvious one as vision is the eminent learning tool of the deaf. The last solution, "frequent quizzes," is not regarded very highly. Hearing-impaired students need their confidence bolstered and their self-esteem nurtured; requiring them to constantly prove themselves via tests and quizzes is of dubious benefit.

The third largest problem is "a negative attitude toward English," and four viable solutions are recommended.
The first is "to provide a variety of high-interest activities besides the usual classroom fare: panel discussions, skits, plays, games," and so forth. Activities entail participation, which in turn promotes enthusiasm; it likewise forestalls indifference, boredom, and petulance.

A second solution is "to stress the need for English skills in career and everyday life." English language skills are not a frivolity. Deaf students must be made aware of the critical role communication plays in the ease or difficulty of existence in a hearing world.

Another solution to negative attitude is "to foster the desire to learn via deaf role models." Deaf individuals from faculty, staff, and the larger community who have surmounted their communication problems to excel in personal and professional endeavor provide superb role models for the impressionable young as well as the skeptical mature.

A final solution to negativity is "to provide much individual attention." Sincere personal consideration and concern are definitely advantageous when attempting to influence and change attitudes.

The fourth problem confronted is "lack of confidence, motivation, and educational and career goals." This problem results from the typical low self-confidence and self-esteem many hearing-impaired students experience. Many solutions are suggested, the first being "to emphasize the necessity of lifelong learning." This implies that hearing-impaired
students must first realize they are capable of learning, and that learning, now and in the future, provides the access to their aspirations.

The next solution, "to use high-interest, personalized reading and writing tasks," alludes to confidence and motivation. If interest is piqued, involvement and activity soon follow; both are natural confidence-builders and motivators. "Connect education to 'real world' experiences" is posited as a solution to lack of educational and career goals. Hearing-impaired students must apply what they learn to their present lives and needs. Then they will be able to associate education with hopes and plans for the future.

"Use a bilingual/bicultural philosophy in language teaching" is another proposed solution to lack of confidence, motivation, and goals. Hearing-impaired students must learn respect for their language and their deaf heritage in order to develop confidence in themselves as human beings. Then they can become motivated to achieve their potential, as unlimited as any person's, in life and career.

The solution, "to carefully control the difficulty levels of materials," alludes to building confidence. Pushing deaf students beyond their educational frustration level will destroy rather than build confidence, and it will definitely discourage motivation. "Prepare classes carefully and use humor frequently" are pluses in any
teaching endeavor; they are especially important when dealing with confidence deficiencies. Likewise, "use creative questions and exercises to encourage the flow of ideas" is a viable stimulant to both confidence and motivation. Working on all these areas—confidence, motivation, and goals—via meaningful individual communication doubtlessly will reap great benefits.

The fifth most frequently cited problem is "inadequate reading comprehension, "for which three solutions are posited. The first is "to use quantities of easily readable, high-interest material." In order to encourage deaf students to read at all, material must stimulate their interest and imagination; and in order to ensure comprehension, material must not be at or beyond the frustration level.

The next solution is "to concentrate on vocabulary in context." It is true that drill and practice, pictures and flashcards, even quizzes—all provide exposure to vocabulary. But dealing with vocabulary organically in reading passages makes a stronger impression on students and better assures assimilation.

The least mentioned solution, "to use a variety of comprehension questions," is a tactic frequently used and fairly effective in many college reading programs. But as it presupposes mastery of the more fundamental skills of
word recognition and word meaning, it is not of the highest priority.

The sixth identified problem is "lack of background knowledge," readily comprehensible given the rather insular world of deaf students. The most often proposed solution is "to relate ideas and concepts to students' individual lives." Much of what deaf students know and understand emanates from their physical environment and personal experience, and these attributes can be used to expand and broaden their world.

Another recommended solution is "to furnish background knowledge in various inventive ways." The teacher is only limited by imagination when it comes to conveying knowledge and information: discussions, stories, guest speakers, field trips, print, film, TV, and so forth.

The next problem of note is "lack of instructor time to remediate all the problems associated with teaching English to the hearing impaired." Although cited by only six programs, this attitude is implied throughout the 35 programs. The suggested solutions are not surprising: avoid overkill by "stressing one skill at a time," and "do not expect perfect results." Unrealistic expectations discourage and depress students, particularly high-risk students. Instructor disillusion and burnout constitute disaster to any educational program but especially to one with considerable ingrained difficulties.
The last problem noted is "poor study habits," surprisingly mentioned by only two programs. This problem is usually an annoying one for instructors as it distracts students from task and detracts from course content. Perhaps this problem is less problematic than expected because of the thoughtfulness and patience of the instructional staff of hearing-impaired programs. The solution is a practical one: "give assignments and directions clearly and methodically."

Materials and Information

Ten different types of materials and information were furnished by the programs that responded to this request. Eight programs made no response. Course outlines and programs brochures represent the most frequently sent information. In some cases, program brochures provide an overview of all related hearing-impaired services as well as the preparatory English program. The course outlines are particularly valuable as they specifically delineate course content, methods, and materials. Textbooks and print materials, media materials, and computer software cited in course outlines are listed in Appendix E of this study.

Samples of drill/practice materials, teacher-designed tests and quizzes, and reading and writing assignments represent the next most frequently provided materials. These materials provide further insight into the preparatory
courses as they are actually taught day-to-day. Some of these materials are reproduced in Appendix E of this study.

Very few writing samples were provided since most instructors do not keep them on file. Of the furnished samples, all illustrate writing problems typical of hearing-impaired students. Also forwarded were a materials catalog, an instructor handbook, a student learning contract, and a copy of the Silvaroli Classroom Reading Inventory. The materials catalog is very comprehensive, citing visual media as well as print materials suited for use with hearing-impaired students.

Summary

This chapter reflects a synthesis and discussion of the goals and objectives, practices and procedures, and problems and solutions of the 35 preparatory hearing-impaired English language programs participating in this study. The resulting picture is one of both similarity and diversity. While some of the responses are unique to one or a few programs, many are repeated in a considerable number of them. Many of the responses are expected and appropriate; others, on the other hand, are unexpected and seemingly inappropriate, or at best, somewhat difficult to interpret. Furthermore, many of the programs adhere to the more traditional practices and procedures while a few display adaptation and innovation.
The question that prompted the most concern and drew a good many common responses is the last: what are the major problems involved in teaching English to hearing-impaired students, and what are your recommended solutions? Undoubtedly, educators of the hearing impaired unanimously acquiesce in one assertion: monumental problems exist, and thus far in their experience, guaranteed solutions do not.
CHAPTER 5
SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Introduction

A summary of this study and conclusions drawn from it are presented in this chapter. Following the summary and conclusions are recommendations resulting from this study for the development of a preparatory English language program for Clark County Community College and other concerned colleges not currently offering such a program. The chapter concludes with recommendations for further investigation into the teaching of English to hearing-impaired college students.

Summary

The purpose of this study, indicated in Chapter 1, was to develop recommendations for a preparatory English language program for hearing-impaired college students. As seen in the literature review in Chapter 2, educators of the hearing impaired have been preoccupied for years with the educational methods, materials, and modes that will best serve students' English language needs as well as with the considerable problems involved in attempting to serve those needs. This preoccupation continues today as evidenced by the diverse approaches and elements of current preparatory
English language programs for the hearing impaired, analyzed in Chapter 3. Chapter 4 presented a synthesis and discussion of the relative merits and detractions of the various approaches and elements of the participating preparatory programs.

Conclusions and Implications

From the results of this study, several conclusions and implications can be drawn. Current preparatory English language programs for hearing-impaired college students demonstrate considerable diversity as well as significant similarity. They likewise encompass a broad spectrum of educational approaches, ranging from the very traditional to state-of-the-art media/computer technology. Regardless of their differences, each of these programs manifests the primary intention of serving the cognitive and affective educational needs of their hearing-impaired students in the most effective ways and with the most effective means possible. However, it is evident from this research that no single program has discovered all the best ways and means, but collectively, many of the programs have discovered a good number of excellent ones. Conversely, from the perusal of that which is currently being done, it is apparent that still other approaches and methods, seemingly ignored, need to be considered and evaluated.
It also can be determined from this study that collaboration and sharing of teaching experiences among the highly competent professionals working in hearing-impaired programs are beginning to occur. This auspicious trend is likely to continue, and it must definitely accelerate and expand. In the spirit of contributing to the fulfillment of the need for mutual enlightenment, the following recommendations are presented.

Recommendations for an English Language Program for Hearing-Impaired College Students

Goals and Objectives

Academic Goals

Academic goals of a preparatory hearing-impaired English language program should definitely include to achieve success in college academic courses and eventually to obtain a degree. However, long-term goals are not always realized without the prior accomplishment of more immediate goals. For hearing-impaired college students, the shorter-term goal of preparation for mainstream developmental reading/writing courses should not be overlooked. Incremental steps to English skills must be stressed by preparatory programs in order to realize desired future goals.
Another recommended goal is for hearing-impaired students to become aware of the role of the computer in academics. Because of the visual orientation of the monitor and the user-friendliness of most current software, hearing-impaired students definitely should be exposed to this helpful educational tool.

Vocational Goals

A meritorious vocational goal is to develop in hearing-impaired students realistic and attainable career goals. The mastering of English language skills is closely associated with job and career potential, and hearing-impaired students must realize this fact. Doubtlessly a priority vocational goal is to improve English skills for job and career performance. English language programs must expressly strive to enhance success and avert difficulty and failure in practical employment.

A related recommended vocational goal is to provide the English skills necessary for continued success and promotion in the employment world. Indeed, hearing-impaired individuals are not precluded from fulfilling their potential because of the lack of intellect; they must not be precluded from such fulfillment because of the lack of communication skills.
Personal Goals

Probably the most expedient personal goal of English language programs for the hearing impaired should be to develop a positive attitude toward English. Strides in skill improvement cannot be made without a clearly defined, accepting, and energetic attitude. If this attitudinal goal is achieved, the goal of satisfactory adaptation to the entire college environment will be expressly more attainable. Recommended longer-term goals of English language programs for the hearing impaired are to acquire personal and emotional independence; recognize self-worth and increase self-esteem; and, in order to achieve these goals, realize the necessity and benefits of lifelong learning.

Bilingual/Bicultural Goals

The recognition of American Sign Language (ASL) as a bona fide language and the true first language of the deaf is a relatively recent phenomenon in educational circles. Thus, the goal of mastering English as a second language (ESL) through ASL is a viable and pragmatic one. Special ASL/ESL text materials need to be developed and refined. A related recommended goal is to accept, use, and take pride in bilingualism. Respect for and appreciation of both languages can only be advantageous in achieving a better
quality of personal and professional life in a bilingual/bicultural world.

**Reading Objectives**

Since the foundation of reading is words and sentences, the most tactical reading objectives are to expand vocabulary and improve comprehension. Reading and enjoying a wide variety of materials is a related objective, one which can help accomplish the first two objectives. Since vision is the primary learning sense of the deaf, interactive video materials to enhance reading comprehension need to be designed and heavily utilized. Understanding and organizing study material are likewise essential reading objectives for college students. Interpreting and evaluating reading material, while much more difficult than recognizing vocabulary and comprehending meaning, are highly desirable skills for college students and informed adults. Increasing reading rate, while not a critical objective for hearing-impaired readers, is one well worth pursuing.

**Writing Objectives**

The most fundamental writing objective for hearing-impaired students is to master the basics of English grammar and sentence structure. This objective is not a simple one as most deaf students lack familiarity with English syntax. They have not, for the most part, been exposed to English
during their critical language-acquiring years. Another important writing objective is to develop the basic writing-as-a-process skills: thinking, prewriting, writing, editing, proofreading, revising, and rewriting. These skills are pertinent to all college writing responsibilities. Improving spelling and vocabulary skills are closely related, practical objectives.

A more sophisticated writing objective is to learn and practice various writing tasks, such as comparison/contrast, illustration/example, cause/effect, analysis, etc. These rhetorical patterns are likely to materialize as future academic writing assignments, and it is not overly ambitious to begin addressing them in preparatory English courses.

An already mentioned recommended goal for preparatory hearing-impaired English language programs relates to computer literacy. A specific writing objective of considerable merit is to learn word processing. The word processor eliminates many of the physical demands of writing, especially beneficial for hearing-impaired students, most of who have not developed extensive cursive skills.

**Instruction**

A well qualified instructional staff is of extreme importance in preparatory English language programs for the hearing impaired. Preferably, all instructors in such
programs should hold a minimum of a Master's degree. Furthermore, the particular educational emphasis should be in Deaf or Special Education, English, ESL, Linguistics, or Reading. If instructors are not proficient in sign, as is the case with many English, Reading, and ESL teachers, it is recommended that they be teamed with a Certified Interpreter to prepare and team-teach courses. This supercedes merely providing the non-signing instructor with an interpreter during class time.

Tutors and teacher's aids in preparatory hearing-impaired English programs preferably should hold Bachelor's degrees with emphases in Special Education, English, ESL, or Reading. Minimum proficiency in sign is recommended, especially when qualified interpreters are not always available.

Experience in deaf adult education and the deaf cultural community is certainly a plus for all instructional staff, and the acquisition of such ancillary experience is highly desirable. When qualified deaf instructors are available, it is a prime recommendation that their expertise and experience be utilized in preparatory English programs.

A final recommendation for the area of instruction: workshops and seminars should be conducted on a regular basis during the academic year, and, when feasible, during the summer months. There must be ongoing training in and
refining of the very special instructional skills needed for teaching the hearing impaired.

**Instructional Methods**

Traditional classroom lecture/discussion with a signing instructor or an instructor/interpreter team is recommended as the most appropriate basic instructional method. Hearing-impaired classes will normally be small, but small classes may still admit significant differences in ability; in this case, grouping can be used for at least part of the class period. A critical factor in a hearing-impaired English language program, individual attention, is also a highly recommended instructional method. Hearing-impaired students require one-on-one attention not only because of ability deficiencies and differences, but also because they need a great deal of encouragement and confidence building.

Monitored writing labs are recommended as a supplement to classroom instruction. Writing labs, both with and without computers, provide non-threatening, informal, and beneficial practice. Computer networks in classroom instruction, used by a few hearing-impaired English language programs, are an effective and enjoyable recent technological innovation; they are recommended, but with the caveat that such networking systems are extremely costly and thus may be prohibitive, especially for beginning programs.
The types of instructional materials used by teachers are highly individual and preferential: what is favored by one is often ignored by another. Recommended are the traditional instructional materials reported by many of the participating programs: textbooks of choice (adapted and/or rewritten, if appropriate); preferred publications such as periodicals, pamphlets, biographies; teacher-made drill/practice materials; and writing assignments.

Also highly recommended for variety in classroom instruction are visual instructional tools such as overhead transparencies and captioned films and video programs. Computer software for grammar drill/practice and writing practice, especially in writing labs, is recommended as supplemental to the traditional materials.

A final recommendation for the areas of instructional methods and materials: there exists a need for more effective sharing of the expertise and experience prevalent in current preparatory English language programs. Local, regional, and national consortiums, conferences, and workshops for instructors of hearing-impaired college students should be established and widely publicized. Program administrators should encourage and assist faculty to attend and participate in such valuable professional gatherings.
Assessment and Evaluation

Of the nineteen published tests used by the respondent programs, only two are normed on a hearing-impaired student population, the Stanford Achievement Test, Hearing Impaired Edition (SAT-HI), and the Test of Syntactic Abilities (TSA). Thus, these are recommended as the most appropriate standardized instruments. Several other published tests are suited to hearing-impaired student needs: the Career Planning Program (CPP), the Adult Performance Level Survey (APLS), the Comparative Guidance and Placement Program (CGP), the Multiple Assessment Programs and Services (MAPS), the Objectives-Referenced Bank of Items and Tests (ORBIT), and the Classroom Reading Inventory (CRI). All of these, because of criterion-referencing or non-normed adjustable scoring, are suitable for use with hearing-impaired students. All in all, there is a distinct need for more effort in the area of reliable and valid normative test development for hearing-impaired college students.

Unit/chapter textbook tests are recommended for ongoing evaluation in that they are convenient and pertinent to the material tested. It may be advisable, however, to revise and adapt textbooks tests if such revision will improve suitableness. Computer software testing materials designed and published by instructors and/or instructional departments (reported by one participating program) are also recommended for mastery testing. Such testing materials are
particularly adapted to the individual program and its students. Commercial software, while extremely plentiful, varies in quality and appropriateness so must be selected judiciously.

In congruence with the practice of all 35 respondent preparatory English language programs, institution/teacher-designed instruments are recommended at least as part of an assessment/evaluation package. Custom-designed pre-/post tests can be used in supplement to a standardized published instrument. Institution/teacher-made tests are intended to accommodate a specific student population. However, it must be recognized that reliability and validity will always be an issue with teacher-made tests. Writing samples such as paragraphs and short essays are recommended as viable assessment and evaluation methods.

**Major Problems and Solutions**

It is probable that several of the following problems will surface in English language programs for hearing-impaired college students. While it is not possible to provide guaranteed solutions to these considerable difficulties, recommended solutions are suggested.

**Problem:** Hearing-impaired students lack fundamental writing skills.

**Solutions:** Provide plenty of drill/practice in English grammar and syntax. Practice writing the different English
sentence patterns. Use ASL as a first language to teach English syntax and sentence patterns. Learn and practice different types of writing tasks. Give practical writing assignments students can identify with. Provide as much individual instruction as possible.

Problem: Hearing-impaired students manifest deficient vocabulary.

Solutions: Provide drill/practice of word roots, affixes, origins. Use ASL vocabulary to compare/contrast with English vocabulary. Use visual aids such as pictures, flashcards, transparencies. Use quantities of diverse reading materials to increase exposure to English vocabulary.

Problem: Hearing-impaired students are unable to comprehend reading material.

Solutions: Provide lots of easily readable, high-interest material. Concentrate on vocabulary in context in reading passages. Utilize comprehension questions and other comprehension tactics.

Problem: Hearing-impaired students lack background knowledge.

Solutions: Furnish background knowledge/information in various inventive ways: lecture/discussion, print, film/video, guest speakers, field trips. Relate knowledge/information to students' own lives and experience.
Problem: Hearing-impaired students demonstrate poor study habits.

Solutions: Emphasize the importance of listening to and following directions and completing assignments on time. Give assignments and directions clearly and methodically.

Problem: Hearing-impaired students lack self-confidence, motivation, and educational and career goals.

Solutions: Adopt a bilingual/bicultural approach in teaching language, background information, concepts. Use high-interest, personalized reading and writing tasks. Carefully control the difficulty level of materials to avoid discouragement and use humor frequently. Use inventive questions to encourage ideas and creativity. Connect education to students' present experiences and needs and also to attainable future achievements. Emphasize the necessity and benefits of lifelong learning to improve life's prospects.

Problem: Hearing-impaired students display a negative attitude toward English.

Solutions: Provide high-interest activities other than the usual classroom activities: plays, games, skits, panel discussions, special projects. Stress, non-didactically, the need for English skills both in everyday life and future career. Foster the desire to learn and master English via deaf role models. Provide much individual caring, consideration, and attention.
Materials and Information

Among the various materials furnished by the 35 participating programs were course outlines; program brochures; titles of textbooks, pertinent publications, visual media and computer software programs; drill/practice materials; teacher-designed tests and quizzes; and reading and writing assignments. These materials provide valuable insight into preparatory English language courses as they are actually being taught. Recommended materials from participating programs are reproduced in Appendix E of this study.

Recommendations for Further Study

For interested and concerned educators, information regarding demographic statistics and quantifiable program facts can be easily accessed through the College & Career Programs for Deaf Students, published biennially by Gallaudet University and the National Technical Institute for the Deaf. From this publication alone, it is evident that there exists a great deal of concern for the English language problems of hearing-impaired college students and what programs have been developed to help alleviate these considerable difficulties. But from the formal and informal research conducted in this study, it is evident that there is insufficient communication and sharing among educators as to what is actually being done and what is practically
effective "behind closed doors"— in the individual classroom.

This situation is what suggested and guided the particular thrust of this study. Much of the research in this study was, by necessity, conducted during the summer months when many educators are typically unavailable. Therefore, a replicate study conducted during the academic year may produce more thorough results. Likewise, a replicate study with the additional tactic of selected on-site visitations would afford specific and immediate insight into established programs and may thus enhance results. And eventually, as more and more objective evaluative data become available from various programs, a comparative study of the ASL/ESL types of programs and the more traditional types may discover valuable information as to their relative merits and effectiveness.

While such studies would concentrate on hearing-impaired programs, related studies could investigate other aspects of college education for the hearing impaired. For instance, research is needed on the students who participate in these programs. What are student expectations of programs and are their expectations being met? If they are being met, how? And if they are not being met, why not? What is the nature of student retention in hearing-impaired programs, and what are the problems inherent therein? Is
there tracking of students who complete their programs, and
if so, what are the findings and implications?

A crucial component of hearing-impaired college
programs is instruction. Who are the teachers involved in
these very specialized programs, and what is their
motivation for participation? What is the extent of their
educational and emotional commitment to their students?
What expectations do they posit for their students? For
themselves? What are their recommended measures for the
expansion and improvement of current programs?

Administration attitudes and priorities constitute
another potential subject for related studies. Is there a
commitment to the needs of hearing-impaired students on the
part of higher administration? Why or why not? Are there
additional potential support resources for hearing-impaired
programs available to administrators other than those
currently being utilized, and if so, how can these be
accessed?

In another vein of inquiry, what are community
attitudes and priorities regarding college education for the
hearing impaired? Would large corporations and/or local
companies be willing to provide human and material resources
for hearing-impaired college programs? Would the deaf
community contribute to and appropriately participate in
such programs? Would the deaf community volunteer time for
valuable extra-curricular pursuits such as counseling, role-modeling, and planned leisure activities?

In brief, many viable possibilities exist for future investigation into the critical area of postsecondary education for the deaf. Providing widespread higher education for the deaf is an endeavor which is barely out of its infancy. Only the attention, involvement, and determined effort of concerned educators will ensure the quality of that education as it approaches adolescence and eventually achieves maturity.
REFERENCES


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Date, 1989

Dear Director/Coordinator,

The Developmental Studies Department at Clark County Community College is currently developing a preparatory reading/writing program for deaf students. The College & Career Programs for Deaf Students 1988 published by Gallaudet University and the National Technical Institute for the Deaf indicates that your institution offers preparatory activities in which your hearing impaired students participate.

To help us in our planning, would you please share with us the information requested in the attached questionnaire about the reading/writing portion of your preparatory program?

It would be extremely helpful if you could send the requested information by June 15, 1989.

As you are the Director/Coordinator of Hearing Impaired Student Services at your college, you are undoubtedly dedicated to the improvement of educational opportunity for the deaf. I hope that you will be able to help us in our endeavor to follow your example. Thank you.

Sincerely,

Marguerite Re, Instructor, Developmental Studies
702-643-6060, Ext 734 (Office); 257 (Message)
702-362-0301 (Home)
APPENDIX B

PREPARATORY READING/Writing PROGRAM QUESTIONNAIRE

Would you please respond to the following questions about your preparatory reading/writing program. Please use a separate page, if necessary.

1. Goals/Objectives. What are the program goals/objectives? (If you have a prepared document, please send in lieu of response.)

2. Instruction. What degrees, special training, or background do the instructors teaching in your preparatory reading/writing program have?

3. Instructional Methods. Of the following, which do you use, how much (% of time spent), and can you briefly describe, if appropriate?
   - Traditional classroom instruction
   - Classroom instruction with grouping
   - Classroom instruction with computers
   - Individual instruction/tutoring by instructor
   - Peer tutoring
   - Writing lab with computers
   - Writing lab without computers
   - Other methods
APPENDIX B

4. **Instructional Materials.** Of the following, which do you use, how much do you use them (Heavy, Moderate, Light), and would you include titles/types and a brief description?

- H M L Textbooks
- H M L Other published reading/writing materials
- H M L Teacher-made drill/practice materials
- H M L Teacher-assigned writing tasks
- H M L Computer software (publisher’s copyright)
- H M L Teacher-made computer software
- H M L Other materials

5. **Evaluation.** What pre/post/tests and/or other evaluation instruments, standardized or teacher-made, do you use in your program? (Please include titles and a brief description.)
6. What, in your experience, are the major difficulties in teaching deaf students to read/write English competently and how do you handle them?

Finally, could you please send (1) program/instructional materials: program brochures, copies of course syllabi(outlines), samples of teacher-made materials, reading/writing assignments, tests -- anything else you think would help us with the content of our preparatory reading/writing program; and (2) writing samples: paragraphs written by your students at start and finish of the semester, if possible, or any samples you may have. Your time, help, and caring are greatly appreciated.
APPENDIX C

National Programs for the Deaf

Gallaudet University
National Technical Institute for the Deaf

Two-Year, Liberal Arts, Vocational/Technical Colleges
With Programs for Deaf College Students That
Include A Preparatory English Language Program

Programs in the Northeast

Northern Essex Community College
Northwestern Connecticut Community College
F.H. LaGuardia Community College, CUNY
Mount Aloysious Junior College
Community College of Philadelphia

Programs in the Midwest

Waubonsee Community College
William Rainey Harper College
Iowa Western Community College
Johnson County Community College
Hennepin Technical Institute
St. Paul Technical Institute
St. Louis Community College at Florissant Valley
Columbus State Community College
Milwaukee Area Technical College

Programs in the South

J. Sargeant Reynolds Community College
North Florida Junior College
St. Petersburg Junior College
Florida Community College at Jacksonville
DeKalb College
Floyd College
Hinds Community College
Central Piedmont Community College
Western Piedmont Community College
Chatanooga State Technical Community College
El Paso Community College
Tulsa Junior College
Lee College
Southwest Collegiate Institute for the Deaf of Howard College
New River Community College
St. Philip's College
APPENDIX C

Programs in the West

Community College of Denver
Pikes Peak Community College
Utah Valley Community College
Pima Community College
De Anza College
Golden West College
Laney College
Los Angeles Pierce College
Los Angeles Trade Technical College
Mt. San Antonio College
Ohlone College
Pasadena City College
Bakersfield College
Rancho Santiago College
San Diego Mesa
Cabrillo College
San Joaquin Delta College
Chemeketa Community College
Portland Community College
Seattle Community College
APPENDIX D

Responding Directors/Instructors

National Programs

Jane Freiburg Nickerson
Gallaudet University
Washington, DC

Ronald R. Kelly
National Technical Institute for the Deaf
Rochester Institute of Technology
Rochester, NY

Programs in the Northeast

Elaine Glennon
Northern Essex Community College
Haverhill, MA

Daniel Connors
Northwestern Connecticut Community College
Winsted, CT

Paul Menkis/Sue Livingston
F.H. LaGuardia Community College
Long Island, NY

Dan Dalton
Mount Aloysius Junior College
Cresson, PA

Amy L. Cohen
Community College of Philadelphia
Philadelphia, PA

Programs in the Midwest

Robert W. Baker
Waubonsee Community College
Sugar Grove, IL

Marion Reyburn
Iowa Western Community College
Council Bluffs, IA

Mary Ellen O'Brien/Jeanie Vogel
Johnson County Community College
Overland Park, KS
APPENDIX D

David Buchkoski
St. Paul Technical Institute
St. Paul, MN

Jean Kreutter
Hennepin Park Technical Institute
Brooklyn Park, MN

Tom Sanew
Milwaukee Area Technical College
Milwaukee, WI

Programs in the South

Peggy Brent
Hinds Community College
Raymond MS

Theresa Johnson-Sligar
DeKalb College
Clarkston, GA

J. Duffer Childrey
J. Sergeant Reynolds Community College
Richmond, VA

Nanci Sheetz
North Florida Junior College
Madison, FL

Dee A. Risley
St. Petersburg Junior College
Clearwater, FL

Marcella Harper
Florida Community College at Jacksonville
Jacksonville, FL

Donna M. St. Clair
Central Piedmont Community College
Charlotte, NC

Louise White
Western Piedmont Community College
Morgantown, NC

Suzanne Brown
El Paso Community College
El Paso, TX
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Kim Brecklein
Tulsa Community College
Tulsa, OK

Rosemary Kauffman
Lee College
Baytown, TX

Leslie Earnst
Southwest Collegiate Institute for the Deaf of Howard College
Big Spring, TX

Lonna Ayres
St. Philip's College
San Antonio, TX

Programs in the West

Jackie King
Community College of Denver
Denver, CO

W. B. Flynn
Pikes Peak Community College
Colorado Springs, CO

Richard Brodesky/ Helene Cohen
Pima Community College
Tucson, AZ

Sharon A. Marrone
De Anza College
Cupertino, CA

Paula Mucciaro
Marty Jefferson
Golden West College
Huntington Beach, CA

Eliot Helman
Laney College
Oakland, CA

Norm Crozier
Los Angeles Pierce College
Woodland Hills, CA
APPENDIX D

Kirsten Gonzalez
Mt. San Antonio College
Walnut, CA

Susan Forman
Ohlone College
Fremont, CA

Herb Terrier
Rancho Santiago College
Santa Ana, CA

Millie O'Rourke
San Joaquin Delta College
Stockton, CA

Tom Humphries/Lori Seago
San Diego Mesa College
San Diego, CA

Wendy Baxter
Cabrillo College
Aptos, CA

Jane Johnson/Jerry Ludeke
Bakersfield College
Bakersfield, CA

Robin Jacobs/Rita Collins
Portland Community College
Portland, OR

Darlene Toole
Chemeketa Community College
Salem, OR

Katherin Carlstrom
Seattle Community College
Seattle, WA
APPENDIX E

Respondent Programs Teaching Materials

Resource Materials

A Catalog of Educational Print Materials 1989, NTID
A Catalog of Captioned Educational Videotapes 1989, NTID
Gallaudet Media Distribution 1989
Curriculum Materials Useful for the Hearing Impaired,
D. McCarr & M. W. Wisser, Dormac, Inc.
Computer Software for Deaf Adults, N. Crozer,
Woodland Hills, CA

Dictionaries

Longman Dictionary of American English
Longman Dictionary of Contemporary English
Longman Photo Dictionary
Thornike Barnhart 7th Ed. Beginning Dictionary,
Scott Foresman
Websters New World Dictionary of the American Language
2nd ed., Prentice-Hall

Reading/Vocabulary Textbooks

Disasters/Phenomena/Monsters/Heroes, Jamestown Publishers
Insights and Ideas, Patricia Ackert, Holt, Rinehart,
& Winston
Developing Reading Skills, L. Markstein, L. Hiraswa
Newberry House
A & B, Dorothy McCarr, CBS Publishing
World of Vocabulary, S. Rauch, International Reading Assn.
Longman ESL Readers, Longman
101 American English Idioms, Passport Books
Worldly Wise, Educators Publishing Company
Elementary Composition Practice Books, Newbury House
The Proficient Reader, I. Epstein & E. Nieratka,
Houghton-Mifflin
Myth Makers & World Shakers, Judd & Kalnotz,
Holt, Rinehart & Winston
Basic Reading Skills Handbook, H. Wiener & C. Bazerman,
Houghton Mifflin
Individualized Reading Skills Program, Houghton-Mifflin
Reading for College and Life, D. Carter & D. Booher,
Kendall-Hunt.
AVT Learning Systems and Reading Progress Folder, HBJ
Turning Point in Reading, D. Gilbert, Prentice-Hall
Programmed College Vocabulary, G. Fienstein, Prentice Hall
Reading Milestones, Dormac, Inc.
Sticky Situations, Workbooks 1-10, Dormac, Inc.
More Myths, Dormac, Inc.
Reading Faster and Understanding More, Miller & Steoher, Little, Brown
Fundamentals of College Reading: Strategies for Success, Prentice-Hall
Power for Reading Comprehension, Lee Kolzow, Prentice-Hall
Reading Faster and Understanding More, 2nd ed., Little Brown
Skills in Language, Cambridge Skill Power Series
Supporting Reading Skills, R. A. Boning, B. Loft
Picto-Cabulary Series, R. A. Boning, B. Loft
Specific Skills Series, R. A. Boning, B. Loft
Interpreting Idioms, R. A. Boning, B. Loft
Reading for Understanding (RFU), SRI
Helen Keller's Teacher, M. Davidson, Scholastic, Inc.
Vocabulary Building for the Young Adult, Dormac, Inc.
I Can Make It On My Own, M. Berman & L. Shevitz, Goodyear Publishing Company
Lots of Things, Finney Company
The Language of Directions, A Programmed Book, A.G. Bell Association for the Deaf
Survival Reading Task Cards, Teachers' Exchange of San Francisco
Following Printed Directions, Special Service Supply
You and Your World, Xerox Publications
Idioms - How to Teach Them to the Deaf, Gallaudet Press
Raining Cats and Dogs, Myra Auslin, Dormac, Inc.
Dictionary of Idioms for the Deaf, M. Boatner & J. Gates, Barron's Educational Series
Using an Index and Using a Table of Contents, R. A. Boning, Dexter & Westbrook
Occupational Outlook Handbook, U.S. Dept. of Labor
Reading Schedules, R. A. Boning, Dexter & Westbrook
Occupational Education Fact Finding Series, Special Service Supply
Reading Ads, R. A. Boning, Dexter & Westbrook
American Topics, Robert Lugton, Prentice-Hall
College Reading, 2nd ed., M. Lenier & J. Maker, Wadsworth
Reading Skills Handbook, Scott Foresman
Spaghetti Again, Addison-Wesley
Six-Way Paragraphs, Jamestown Publishers
New Intercom 1, Heinle & Heinle Publishers
Practice with Idioms, Robert Feare, Oxford UK Press
A Better Reading Workshop, R. Potter, Globe Book Co.
Ten Steps to Improving Basic Reading Skills, John Langan, Townsend Press
Perspectives: An Intermediate Reader, R. Fox, HBJ
Viewpoints USA: A Basic ESL Reader, R. Vann & V. Hefley, Harper & Row
Reading Skills, Taylor, Random House
Turning Points, Kieszak, Globe
Insights & Ideas, Ackert, Holt, Rinehart, Winston
Worldly Wise 1, 2, 3, Hodkinson, Winston Educators
HEP, (Books 1-5), Slater, Dormac, Inc.
Sentence Play, Levy, Amsco
Challenger Series, L. Sabin, W. Harrison, Simon & Schuster
General Articles, Catherine Walter, Cambridge U Press
Reply Requested, Richard Yorkey, Addison-Wesley
Reading Faster & Understanding More, Miller & Steeber
Be a Better Reader, Levels A,B,C,D, Nila Banton Smith,
  Prentice-Hall
Explorations, Rice, MacMillan

Writing/Spelling Textbooks

Ready to Write, Karen Blanchard and Christine Root,
  Longman
Grammar in Context, Sandra L. Elbaum
Practical English Structure, M. Bordman, P.Byrd, B. Schlein,
  Gallaudet Press
Structured Tasks for English Practices (STEP) Series
  Gallaudet Press
Elementary Composition Practice Books, 1 & 2, Newbury House
Guided Composition, Baskoff, Houghton Mifflin
Beginning/Intermediate Composition, Levels 1 & 2,
  Lonon Blanton, Longman
Steps to Composition, Alt & Kirkland, Georgetown U Press
The Complete Sentence Workout Book, C. Fitzpatrick &
  M. Ruscica, D. C. Heath
Guide to Grammar and Usage, Carter, et al
Structuring Paragraphs: A Guide to Effective Writing, 2nd
  ed., A. Parks, St. Martin
Basic Writers Book, Anne Agee
Understanding and Using English Grammar, Azar, Prentice-Hall
Foundation of Learning Language, Macmillan
Verbs, Verbs, Verbs, Dormac, Inc.
Correctness and Effectiveness of Expression,
  John Beyrer, Henry Regnery Co.
Pronoun Pages, P. Townson, Dormac, Inc.
Spelling, M. Wallace, McGraw-Hill
Everyday Reading and Writing, E.M. Kirk, F.C.
  Laubach, & R.S. Laubach, New Readers Press
Fundamental Forms Skill Text, Special Service Supply
TSA Syntax Program, S. Quigley & D. Power, Dormac, Inc.
English Alive, Harold Levine, Amsco School Publications
The Basic Writer's Book, Anne Agee and Gary Kline,
  Prentice-Hall
English Modular Mini-Course, Educulture Tutorial Systems
The Writing Clinic, Ralph Loewe, Prentice-Hall
English Grammar and Composition, John Warriner
Writing With Confidence, Scott Foresman
Basic English Grammar, Betty Azar, Prentice-Hall
Sentence Play, Levy, Amsco
Starting Points: A Guide to Basic Writing Skills, Swartz, Prentice-Hall
Composition Practice, Blanton, Newberry House
Commanding Sentences, H. Mills, Scott Foresman
Elementary Composition Practice, Book 2: A Text for Students of English as a Second Language, L. Blenton, Newbury House
From Copying to Creating, H. Gordon, Holt, Rinehart, Winston
Essential Skills, W. Pauk, Jamestown Publishers
New Concise Workbook, Hans Guth, Wadsworth
Grammar in Context, Sandra Elbaum, Little, Brown
The Sentence Book, Les A. Jacobs, HBJ
Graded Exercises in English, Regents Publishing Co.
Pattern and Practice, M. L. Matthew, Little Brown
Modern English, Marcella Frank, Prentice-Hall
Building English Skills, E. J. Hall, Vonuntad Pub.
You Should Know About English Basic Writing Skill, Teresa F. Glazier, Holt, Rinehart & Winston
Basic Composition for ESL, 2nd ed, Hulzenga, et al

Other Publications

Esquire Magazine
Scholastic Scope, Scholastic Inc.
In This Sign, J. Greenberg, Gallaudet Press
Programs for Individualized Instruction, R.A. Boning
Fragments of Isabella, Leifuer.
Deaf Life Magazine
Deaf American Magazine
Focus: Deaf Artists, Gallaudet Press
Deaf Heritage, Jack Gannon, Gallaudet Press
USA Today and Teacher's Guide
World Around You, Gallaudet Press
Sign Language, Lou Fant, Joyce Media
The Language of Life, E. Gochnor & T. Smith, The Interstate Printers & Publishers, Danville, IL
The Amazing Adventures of Harvey Crumbaker, Skills for Living, Lakeshore Curriculum Materials Centers, La Mirada, CA
Psychology Today, Consumer Service Division
Career World, Curriculum Innovations, Inc.
I'm Deaf, Too: 12 Deaf Americans, F. Bowe, National Association for the Deaf
The Family of Man, NAD
Time Magazine
World Around You: News Capsules
The ESP Journal, Academic Skills Center, San Diego U
Teaching English to Deaf and Second Language Students
   Department of English, Gallaudet University
EMC Corporation, St. Paul, MN (high-interest, low reading-level books for the deaf)

Visual Media

The Miracle Worker, Captioned Films for the Deaf (CFDDC)
   Distribution Center, Washington, DC
On Your Marks, Captioned Film #710, CFDDC
We Discover the Encyclopedia, CFDDC
Using the Telephone Book, Interpretive Education,
   I. E. Products, Inc., Kalamazoo, MI
How to Find a Book in the Library, I.E. Products
English on the Job: Reading Skills, Capt. Film #905, CFDDC
English on the Job: Writing Skills, Capt. Film #906, CFDDC
Career Education Series, Transparencies #185-188,
   Captioned Films & Media Services, Washington DC
Applications and Forms Series, I.E. Products

Computer Software

ESC (Educational Systems Corporation) software
EDL (Apple), Columbia SC
SOI (Structure of the Intellect) Systems, Vida, Oregon
Thinking Works, St. Augustine FL
Word Attack, Speed Reader II, Spell It, Davidson
Fact or Opinion, Cause & Effect, Hartley
Hartley Program for Language Arts
Microlab, Houghton Mifflin
SuperContext, Lin Longfreed, Prentice Hall
English I, ESP Inc, Ontario, Canada
Autoskill Component Reading Subskills Program, Ontario
UNISYS ICON C Programming Language, Phoenix, AZ
English, N. Crozer, Woodland Hills, CA
Proof-Reading, N. Crozer, Woodland Hills, CA
Vocabulary Enrichment, N. Crozer, Woodland Hills, CA
Context, N. Crozer, Woodland Hills, CA
Techsign Project, N. Crozer, Woodland Hills, CA
ENFI (Electronic Network for Interaction), Trent Batson,
   Gallaudet University Department of English
IBM Software
English as a Second Language
Practical Grammar I, II
Grammar Package I

Apple Software
Writing Competency
Developing Basic Writing Skills Level II
English Basics
Dilemma -- Which Ending Will You Choose
Milliken Comprehension Power Program
Milliken Processing Power Program
Milliken Cloze Plus Program
Largewriter
English Language: Prefixes 1 and Suffixes 2
Sentence Combining I & II
Vocabulary Skills: Prefixes, Suffixes, Root Words
Context Clues
Island of the Blue Dolphins
How to Read in the Content Areas -- Literature
Context Clues (Game)
Reading for Detail (Game)
Cause and Effect (Game)
Following Directions (Game)
Reading Mastery (Series A, B, C)
Grammar Mastery (Series A, B, C)
Vocabulary Mastery, (Series A, B, C)
Essential Idioms in English
Figurative Language I, II
Analogies Tutorial I, II
Reading Comprehension: Main Idea and Details

Writing Assignments

Thought Questions

What is good about making new friends?
What is hard about being in college?
What is difficult about moving to a new place?
What is good about knowing American Sign Language
What is good about passing a hard course?
What is bad about quitting school?
What is good about voting in your country?
What is difficult about learning English?
What are some similarities and differences between country life and city life?
What are some similarities and differences between high school and college?
People are often stuck in traffic jams. What are some causes and effects of traffic jams?
Sometimes students fail tests. What are the causes and effects of failing tests?
Topics

Your favorite place
The best thing that ever happened to you
Your favorite person
Why you want to go to college
Something you don't like
Your favorite fun thing
Your favorite restaurant
Your old school
What you did for Christmas
What you did last summer
APPENDIX F

Additional Teaching Materials

**Syntactic Structures in the Language of Deaf Children.**

Theoretical formulations, procedures, major findings, and conclusions of a long-term research project on the syntactic structure of the language of deaf children and youth. The report is of great interest to all those engaged in teaching language to the deaf, in the production of materials, and in the training of teachers of the deaf.


A series of textbooks written specifically to address the structural language needs of hearing-impaired high school and college students; strongly influenced by ESL approaches to grammar instruction.

**Basic English & Basic English Composition.** Media Materials, Inc. Baltimore, MD

Two texts designed for adolescents and adults who have difficulties with written English; vocabulary and directions appropriate for older students. Grammar book includes language and usage. Composition text includes writing sentences, writing paragraphs, and using them in everyday writing.

**The High/Low Consensus.** H. Williams. Bro-Dart, 1609 Memorial Avenue, Williamsport, PA 17701

An annotated bibliography of books suggested by librarians as appropriate for use by students needing high interest/low reading level materials.

**Reading and the Hearing-Impaired individual.** Robert E. Kretschmer, Ph.D. (Ed.). The Alexander Graham Bell Association for the Deaf, 3417 Volta Place N.W. Washington, DC 20007, 1982

A collection of selected articles from the field of reading. The monograph includes research dealing specifically with hearing-impaired readers.
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504 Absolutely Essential Words. Barron's Educational Series, Inc., 113 Crossways Park Drive, Woodbury, NY 11797, 1975

A vocabulary book divided into 42 lessons with 12 words per lesson; supplies word, definition, procedure sentences, and use of words in the context of a paragraph; vocabulary is highly visible in daily language.


A workbook to help hearing-impaired students strengthen their vocabulary; excellent for supplementary material.


The core of the curriculum consists of the five basic sentence patterns; includes a chapter on the problems hearing-impaired students face in acquiring mastery of English.

Developmental Language Centered Curriculum. Texas Education Agency. Statewide Project for the Deaf, 1102 S. Congress Avenue, Austin, TX 78704

Notebook and checklists which present a sequence of language skills based on language-age equivalency; practical and effective and can be used with students of any age.


A series of supplemental booklets for students who need repetitious gradual steps in learning to write simple sentences. Easily adapted to individualization on many levels.


Guide presents ideas and suggestions as well as worksheets for use with newspapers in the classroom;
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includes activities on vocabulary, grammar and punctuation, reading comprehension, and writing and oral communications.

Real Life Reading Skills. B. Jackson Levin. Scholastic Book Services, 50 West 44th Street, New York, NY 10036, 1977

This workbook covers most functional reading skills as reading signs and labels, following directions, reading and filling in forms and applications, using reference material, reading newspapers, and consumer education; well illustrated, very thorough, and designed for use by the individual student.


A workbook covering driving rules, registration, insurance, signs, and driving attitudes.

Help! First Steps to First Aid. Janus Bock Publishers, 2501 Industrial Parkway, West Hayward, CA 94545, 1980

Paperback detailing ten different stories about accidents and what first aid steps to take.

D-Man. B. Stark. Illinois School for the Deaf, 125 S. Webster Avenue, Jacksonville, IL 62605

Written and illustrated at ISD, a D-Man comic book about nutrition; especially geared for students with reading problems who have difficulty understanding nutritional information presented in conventional texts.


Well illustrated, this book covers kinds of insurance; history and principles of insurance; automobile, rent/homeowners, life, and health insurance; how to shop for insurance and insurance terms.

Occu-file. Occupational Awareness, Box 948, Los Alamitos, CA 90720, 1981

Mini-brief cards covering entry level, vocational/technical level, and college level occupations. Listed are education required, minimum age, occupational future,
APPENDIX F

working conditions, etc. Excellent for student research; gives a positive yet realistic summary of occupations.

Fables and Myths. Dormac, Inc., P.O. Box 752, Beaverton, OR 97005

A text providing students with literary cultural heritage without complicated syntactical structures; stresses application of the lessons in Aesop's morals to everyday life situations through illustrations and study questions.

Island of the Blue Dolphins. Dell Publications, 1 Dag Hammarskjold Plaza, New York, NY 10017

The Newberry Award-winning book of historical fiction based on the life of a young Native American girl accidentally stranded on a Pacific Island for 18 years. Includes a series of comprehension questions from literal to inferential meanings; vocabulary activities on meaning and contextual analysis.


These companions analyze the books chapter by chapter; include comprehension and vocabulary checks as well as vocabulary exercises and sentence drills.

Deaf Heritage: A Student Text and Workbook. National Association of the Deaf, 814 Thayer Avenue, Silver Spring, MD 20910

Topics encompass historical development of the deaf culture in America, famous deaf Americans, deaf organizations and publications, American Sign Language, and causes of deafness. Includes comprehension questions, matching questions and follow-up activities for each chapter.

Reading Anthology Levels I, II, III. Scope English Program Scholastic Book Services, 50 West 44th Street, New York, NY 10036

An anthology of famous and not-so-famous authors divided into different units of study; includes fiction and non-fiction works. High interest topics applying to concerns of young people today.
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**Notable Deaf Persons.** G. Braddock, Gallaudet University Alumni Association, Gallaudet University, Kendall Green Washington, DC, 20002, 1975

A compilation of nearly 100 profiles of notable deaf persons who have left their indentation in the world of art, law, religion, science, literature, and education.

**Great Deaf Americans.** R. Panara & J. Panara, T.J. Publishers, 817 Silver Spring Avenue, 305-D, Silver Spring, MD 20910

This book presents success stories of 33 deaf people in the United States who turned their deafness into a challenge. Arranged chronologically; ideal for classroom teaching.

**An Annotated Bibliography of Books and Materials for Adult Basic Education Classes with Deaf Adults.** H. Olson, Gallaudet University. Division of Public Services, Washington DC 20002

A bibliography of books and materials relating to adult basic education with application to the field of deafness.

**Adult Basic Education for the Deaf.** J. Honig & J. Jonas, Fair Lawn Community School, P.O. Box 8, Fair Lawn, NJ 07410

This document describes a commendable local level adult basic education program for deaf adults and out-of-school youth and provides guidelines and helpful hints for implementation of such programs. An analysis is made of various texts and teaching materials in general use regarding appropriateness for hearing-impaired adults with minimal language skills; appendices include sample materials used in ABE classes.
APPENDIX G

Publications About Deafness

Professional Journals

American Annals of the Deaf
5034 Wisconsin Avenue, N.W.
Washington, DC 20016

Journal of Rehabilitation of the Deaf
814 Thayer Avenue
Silver Spring, MD 20910

Teacher of the Deaf
Association of Teachers of the Deaf
Bolton, Lancashire, England

Teaching English to the Deaf
Gallaudet University
Department of English
Washington, DC 20002

Volta Review
Alexander Graham Bell Association for the Deaf
3417 Volta Place, N.W.
Washington, DC 20007

The Deaf Press

Deaf American
National Association of the Deaf
814 Thayer Avenue
Silver Spring, MD 20910

The FRAT
National Fraternal Society of the Deaf
1300 W. Northwest Highway
Mt. Prospect, IL 60056

Gallaudet Today
Gallaudet University
Washington, DC 20002

NTID Focus
1 Lomb Memorial Drive
Rochester, NY 14621
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Audiology and Speech Pathology

Journal of Speech and Hearing Disorders
American Speech and Hearing Association
9030 Old Georgetown Road
Washington, DC 20014

Journal of Speech and Hearing Research
American Speech and Hearing Association
9030 Old Georgetown Road
Washington, DC 20014

Education

American Education
U.S. Office of Education
Washington, DC 20002

Exceptional Children
Council for Exceptional Children
1920 Association Drive
Reston, VA 22091

Journal of Special Education
11 Fifth Avenue
New York, NY 10003

Peabody Journal of Education
George Peabody College for Teachers
Nashville, TN 37203

Teaching Exceptional Children
Council for Exceptional Children
1920 Association Drive
Reston, VA 22091

Rehabilitation

American Rehabilitation
U.S. Rehabilitation Services Administration
Mary E. Switzer Building, Room 1427
330 C Street, N.W.
Washington, D.C.
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Journal of Rehabilitation
National Rehabilitation Association
1522 K Street, N.W.
Washington, DC 20005

Psychiatry and Psychology

Journal of Verbal Learning and Verbal Behavior
Academic Press, Inc.
111 Fifth Avenue
New York, NY 10003

Psychology Today
Ziff Davis Publishing Company
One Park Avenue
New York, NY 10016

Abstract and Index Journals

dsh Abstracts
Gallaudet University
Washington, DC 20002