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ABSTRACT

Presented are 30 papers given at a 1975 symposium on the roll of research and the cultural and social orientation of the deaf. Major papers have the following titles and authors: "Faculty and Institutional Research in a Special Higher Education Institution" (J. Schuchman); "The Roles of Research Laboratories at Gallaudet" (W. Stokoe, J. Pickett, and R. Trybus); "Faculty Research in the Educational Process" (H. Reynolds); "Education, Income, and Job Access" (I. Winakur); "Research Needs on the Gallaudet College Campus" (R. Battison); "Attitudes of Rehabilitation Counselors with the Deaf Toward Deafness and Deaf Persons" (V. Galloway); "A Study of Language Conformity as a Motive Base of the Students in Their Social Activities" (R. Sutcliffe); "Attitudes of the Deaf Toward the Deaf Blind and Research Suggestions Derived from a Review of Attitudes Research" (S. Klopping); "Cued Speech Project in Spain" (J. Soler); "Cultural and Social Orientation Implications in Cued Speech" (O. Cornett); "Findings and Observations on the Effects of Dance" (P. Wisher); "Cultural Differences Between Deaf and Hearing Communities" (C. Padden); "The Cognitive and the Real Structure of Communication in Deaf Society" (W. Stokoe); "A Statistical Investigation of the 17PF Form E as Applied to Hearing Impaired College Students" (C. Jensema); "Socioeconomic Characteristics of Hearing Impaired Students in Special Education Programs" (R. Trybus); and "Educational Research on the College Level" (K. Jordan). (DB)

PROCEEDINGS OF THE FIRST GALLAUDET SYMPOSIUM ON RESEARCH IN DEAFNESS

THE ROLE OF RESEARCH AND THE CULTURAL AND SOCIAL ORIENTATION OF THE DEAF

ORGANIZED AND PUBLISHED UNDER THE AUSPICES OF THE OFFICE OF THE ASSOCIATE DEAN FOR RESEARCH, GALLAUDET COLLEGE, CLARENCE M. WILLIAMS

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GALLAUDET PRESS, 1975

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WELCOME AND PREFATORY REMARKS

Clarence M. Williams

Associate Dean for Research

Good morning, ladies, gentlemen, friends, colleagues, and co-workers.

I welcome you to this earth-shaking event -- the first Gallaudet Symposium on the Role of Research and the Cultural and Social Orientation of Deaf People. This symposium is the first of a projected set of three. The second Symposium will be on the Role of Research and Language and Communication: Research Problems and will be sometime this fall. The third Symposium will be on the Role of Research and Educational Development Research Problems and will take place next winter.

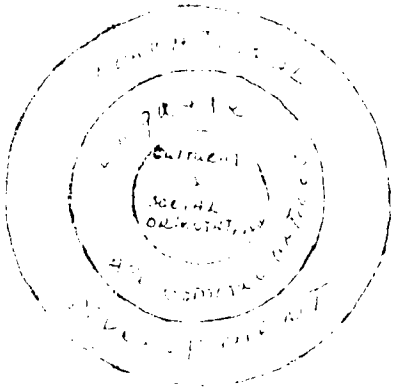
The responses from our letters and notices and your coming here today are very gratifying to me and, I'm sure, to Deans Schuchman, Phillips and Delgado. I have been very pleased to hear from a number of unexpected sources about interest and activity in research as you can see from the program. A fair number of individuals have called and said that they wanted to come but for a variety of reasons could not.

I believe that the one aim of a meeting like this should be to bring out into the open all of our questions, ideas and problems about and with research. I am sure you all know that research is not a panacea--that many, if not

most, of the real problems associated with deafness are and will be very difficult to work with--that knowledge accumulated through research builds up very slowly and that we feel it necessary here at Gallaudet to have some kind of organizing ideas--a research plan, if you will, for the organization of resources so that whatever portion of our total budget we can allocate to research will be well spent

As you may know, as a first step in overall research plan, I have been reviewing the research literature on deafness for some time now and I have tentatively decided that there are three priority areas for research: cultural and social orientation, language and communications, and educational development

I put these topics in this order on purpose and I picture them like this:



Solution in central circle should lead to solution in others.

I picture them like this because I feel strongly that progress towards or from solutions on the inner ones will help us make progress on the more outer ones, if not alleviate some of them

Now, my second step in overall research program is the establishing of these three meetings I spoke about before. The aim of these meetings is to get as clear an idea as we can of what you perceive, what you see the real research issues to be. These issues can be separated into many different research problems and each research problem can be separated into many specific research questions. In so doing, for all three areas we will have a comprehensive picture of the critical issues and related research problems as they are seen by practicing researchers here and professionals in this field.

My third step in this overall research plan is to hold national invitational conferences on each of the three topics (or their appropriate modifications) as soon as possible after each of the local meetings. Well known experts will be invited to contribute papers on the critical issues and research problems we develop here.

The preceding sentences will be expanded this summer into a working paper which will be distributed over the campus for your reactions and additions and serve temporarily as an aid in the allocation of Gallaudet resources. I will appreciate any comment and/or ideas on this plan and any of you are welcome to come see me, sit and drink coffee or other, and discuss how we can put our ideas together to improve the education and lot of deaf people.

FACULTY AND INSTITUTIONAL RESEARCH IN A SPECIAL HIGHER EDUCATION INSTITUTION

John S. Schuchman
Dean of the College

We, at Gallaudet College, are quick to point out that the Liberal Arts program is primarily a teaching program. In fact, when we recruit for new faculty, most departments place a primary emphasis upon good demonstrable teaching skills. However, this recognition of the value of classroom skills should not be interpreted as meaning that Gallaudet is not interested in faculty with research skills or who engage in research activities. Personally, I have never been part of the school that views teaching and research as mutually exclusive activities. Mixed in an appropriate blend, the two activities can and should complement and support each other.

I might point out that research is not only appropriate at Gallaudet but indeed it is one of the dimensions by which faculty members are evaluated. As many of you know, there is a prevalent myth on the campus which, briefly stated, contends that research is not required for tenure at Gallaudet. Like most myths, this one will not stand careful scrutiny.

Several years ago, the Undergraduate Faculty developed a set of guidelines which among other things omits any specific reference to the category "scholarly competence" when a faculty member is recommended for tenure. Some faculty members view that omission as a justification for not doing research. Such a view is wrong. It is wrong for three basic reasons: (1) it is wrong because the omission refers only to a specific tenure evaluation, not the entire faculty personnel evaluation system, (2) it is wrong because the guidelines are stated in minimal terms, and (3) it is wrong because the term "scholarly competence" is not the equivalent of research.

As I stated a moment ago, if one views the omission of "scholarly competence" from the requirement for tenure as a rationale for no research, then one is reading the guidelines out of context. Reference to "scholarly competence" is included throughout the Guidelines and is specifically required in evaluations for merit-increases and/or promotions. In fact, let me quote the summary statement which can be found in the fifth guideline (page 2 of the Red Book): "A member of a Department of Instruction therefore must have a) academic competence, b) competence in the simultaneous method, c) competence as a Departmental and Faculty member, and d) scholarly competence*." Make no mistake about it, scholarly competence is an important factor in the evaluation process. Second, I would point out the fact that our Guidelines are expressed in minimal terms. Hence, the omission, once again, simply means that it cannot be used as a reason to deny tenure and this is related to my third point that research and "scholarly competence" are not exact equivalents. A quick reading of the Guidelines reveals that "scholarly competence" is defined in a specific way - "publications or papers given." The conclusion is clear. The Guidelines simply state that a faculty member can not be denied tenure for the reason of lack of publication or papers presented. No further extrapolation of that point should or can be made. Research is a part of our evaluation system.

Aside from the formal evaluation system, it is my subjective view that there is more interest in research on the campus by the faculty itself. A few years ago when I first joined the faculty, we only had about twenty or twenty-five individuals with an earned doctorate degree; and most of these persons held positions in administration or specific research units. A quick check of the College Catalogue reveals that now we have more than 70 earned doctorates on the campus, most of whom are involved in some instructional capacity. In addition, another 30 or so are actively

*Underlining is mine

working on dissertations. Such a change in the academic profile of our faculty reflects, in my opinion, a desirable interest in research

For those faculty members who seek financial support for research activities, I would point out that in the real world of limited budgets, research related to deafness would tend to be supported more readily than research unrelated to deafness. However, I am informed that the research committee has never turned down a faculty application on the basis of relevance to deafness. In addition, I would point out that the College supports research unrelated to deafness via its sabbatical leave program. Such support is unbudgeted in terms of research yet it represents a substantial financial commitment by the College.

In addition, the College very much supports the classroom research activities of those faculty members who are engaged in materials development projects. We have supported these projects for the past three years. In fact, we have made nearly $80,000 available for such projects this summer.

Since I see that I am cutting into Dean Delgado's time, let me close by commenting on what I see as a real research need for the future. Now that we are preparing for our upcoming reaccreditation by the Middle States organization, it is clear that we have need for a good deal of institutional research. For example, there are many things we need to know about our students. Some faculty members, such as Dr. Ira Winakur, have done some research but we need this information on a regular basis. We need to know what happens to our students when they leave Gallaudet. What are they doing? Are they happy? Did Gallaudet College make a difference in their lives? I hope that when we complete our self-evaluation for the Middle States Reaccreditation process, one of the positive products will be a working institutional research program. Again, thank you for inviting me here today and let me wish you well with your conference activities.

RESEARCH -- THE GRADUATE SCHOOL

A BRIEF PERSPECTIVE

Gilbert L. Delgado

Dean of the Graduate School

I would like to add my welcome to this first symposium.

Perhaps I should begin by clarifying one apparent misconception about the office of the Associate Dean of Research. Dean Williams is physically located in my office and organizationally under the Graduate School. However, research at Gallaudet, to be effective must always be campus-wide. Thus his efforts are not to be restricted by organizational structure.

My main interest for these symposia is to get your reactions and thoughts about the paradigm described and put on the blackboard by Dr. Williams.

I'll make a few comments about the research needs in the Graduate School, as I see them. Several departments of instruction are in the process of redesigning their curriculum into competency based curricula (CBC). The literature on the effectiveness of CBC is that we begin with courses. That is we take an existing course and "objectify" it and seem to overlook the basic question which asks: "Do we need this course at all?" We should take the lead from industry and the military, that is, let's analyze the competencies, skills needed for a teacher, a counselor and audiologist, etc., carefully and scientifically, let's cost-

effect or time-effect these "required" competencies. From this task analysis we can design realistic curricula. We have begun a pilot study in this area in the Department of Education this Spring.

Other needs are correlations of GAPs, GREs, MATs, and letters of recommendation to success in the programs of study. Further correlations of these data to success on the job.

We do a fairly good job of performance evaluation and follow-up of our graduates but this could be better coordinated and systematized.

We receive over 300 applications for admission into the Graduate School annually. Thus we can be selective. We have many excellent applications, that is on paper, and on academic criteria. What we have no way of discerning is whether they have "it." "It" being the service or genuine interest in working with hearing impaired. How many just want an MA and how many truly wish a career in this field? We need research in this area.

With the upcoming doctoral program, we hope to stimulate much faculty interest in research endeavors with these students. We hope we can count on all of you to stimulate, advise and work with the doctoral students.

In closing, may I say I'm pleased with the good turnout but I must emphasize the need for your input to the paradigm -- are these the first needs and priorities for research at Gallaudet?

Thank you.

Through the years we have had a program of new student orientation. We have attempted to assist the new arrival have a better concept of both college life and of himself as a person. This is attempted by means of a two-week orientation period. During this time we give a number of tests and to some extent attempt to assist in proper class placement.

For nearly twenty-five years I have seen students come and go. Over this period of time they have changed in many ways. The student of today is different from the student of twenty years ago, but then again they are not really that different in their actual need to better understand themselves. We have had a degree of success in helping them better understand themselves and in gaining something of a self-concept but we are far from doing the job we would like to do.

What we need is an understanding of how we can best help the preparatory student gain self-knowledge. Those who come to Gallaudet with a reasonably good understanding of their abilities and possible goals are the ones who generally manage to do well academically and otherwise. Those who do not are often those who flunk out or who withdraw in frustration or disillusionment.

We need information from research and the like to help us better understand our young people and how we can be of greater help to them. This includes a better understanding of

dianapolis when I happend to pass another deaf person coming down the escalator in a department store. I was going up and he was coming down. His only greeting to me was the sign, "Hello, Deaf." The sign for deaf was the commonality and the bond we had with each other. It signified the fact that as two deaf persons in the store at that time there was something that set us apart from the others and also signified an understanding that others did not have.

There is strength in this mutuality that we should make use of. It is also a limitation that we should try to reduce when and where it makes a difference in the self-concept and possibilities for success as a student, person, and future contributor to society.

The sense of values is another area that should be explored and data from this used as a means of growth. I would estimate that about one-half of our new students have a very superficial idea of the world and of life. Kindred to young people everywhere, they think they know it all. But there is a real lack of basic knowledge about many things. We need to incorporate this into our orientation and into the continuing college experience. Motivation toward success in the course taken, in the overall college experience, and even in career goals. This is probably a basic area about which we need to know more in order to be of greater assistance during the first few weeks of the Gallaudet experience and then use this as a base for continued growth.

William C. Stokoe, Director, LRL

In addition to seeking new knowledge about two crucial aspects of deafness--the culture and the language of the deaf community--the LRL serves as a source of information to a far-flung network of institutions and persons vitally interested in Gallaudet College research.

There will be an opportunity on Saturday to discuss the research program itself. Today I have a few minutes in which to sketch a picture of the lab's role in disseminating information.

The product itself--information--is variously packaged. About 1,200 readers, many of whom respond by letter or visit, find the monthly newsletter, Signs for our Times, a valuable source of information. A smaller number subscribe to Sign Language Studies, now a quarterly journal. (When the final details of the changeover from Mouton as publisher to Linstok Press are completed, we will have a precise count of its circulation.)

Another view of demand for information from the LRL comes from requests for visits by lab personnel to users' sites. Australia, Britain, Denmark, France, Germany, Mexico, Sweden, and in the U.S. ten states have been visited or have invited visits. The institutional range is an interesting as the geographical; those requesting interaction with LRL personnel include: the David Siegel Institute.

Centre Heise, Døves, Copenhagen; the Psykologisk Lab., Copenhagen; the Manila Skole and Linguistic Institute, Stockholm; the Technische Universität, Berlin; the New York Academy of Sciences; NICHD, Washington; the Callier Center for Communication Disorders, Dallas; Broughton Hospital and NCSD, Morganton; NTID, Rochester; Western Ontario University, London; UCSD, San Diego; the National Institute of Human Communication, Mexico; the University Institute for Applied Linguistics, Edinburgh.

Some of the questions uppermost in our hosts' and correspondents' minds are these: What are the relationships of English to Sign and to various systems of manual English? Will a person starting with total communication later and easily learn English and/or proper Sign? What about SEE, and Sign English, and Ameslan?

Of course the answers to most of these questions are still incomplete, but our current and recent research may help the questioners to arrive at answers in their particular situations. In closing, though, I would like to clear up one question of nomenclature.

Many people we interact with have been using two abbreviations for American Sign Language as if they were complete synonyms: I refer of course to "ASL" and "Ameslan." Since the publication of the winter issue of Gallaudet Today, however, it has become clear that Louie Fant, who coined the term Ameslan, uses it in a very special sense. He defines

deaf persons. He then defines the typical deaf person in very specific socio-economic terms, e.g. working at a trade at below the median income, educated at a residential school to 4th or 5th grade level in English.

Thus Ameslan seems to refer to a special dialect used by a distinct subgroup of American deaf people. As Carl Croneberg showed ten years ago and as James Woodward is getting more detailed evidence about now, the sign language used by deaf people in different parts of our country varies considerably. The LRL, like all linguistic endeavors, attempts to get at the most general and widely valid rules of the language it studies. Just as various regional dialects, however different in vocabulary, come under the general system of American Sign Language, so too do dialects based on socio-economic differences. Therefore we at the LRL will continue to deal with American Sign Language as the overall system; we may shorten the name to ASL or to Sign; but we will use the term Ameslan only for the class dialect Fant defines and not for socially different dialects, e.g. "Childrenese" defined by Cokely and Gawlik (SLD 5, 1974) or the various dialects in Gilbert Eastman's "Sign Me Alice."

James M. Pickett
Director, SCRL

The purpose of the Laboratory is to perform research that will lead to improved speech communication for persons with impaired hearing. There are about 10 million persons in the U. S. who have losses of hearing that are severe enough to seriously interfere with speech communication. Our Laboratory studies the speech and hearing of such persons especially with a view to the development of new sensory aids to communication. Normal speech communication is studied also to provide reference data when necessary.

Gallaudet College is a liberal arts college for deaf students. The Laboratory was established in 1964 to concentrate on research for speech communication, as a complement to the College's educational, clinical, and research activities.

Close relations are maintained between the Laboratory and related activities of the College as follows: Audiology and Speech Clinic, Gallaudet Preschool, and the Kendall School for elementary instruction of deaf children. With these arrangements the Laboratory has access to a wide range of deaf subjects for research.

The Problem of Hearing Impairment and Speech Communication.

Spoken language is the primary means of human communication. Hearing impairments cause deficiencies in speech communication that range from minor to drastically debilitating. The degree of communication deficiency depends primarily on two factors: 1) the severity of impairment and 2) the age of onset.

Severe hearing impairment of early onset causes gross deficiencies

deficit pervades all aspects of education of a person with the result that there is severe retardation of intellectual development. If better means could be found for alleviating the deficient speech communication of such persons, large improvements would occur in their education. The number of these persons in the U. S. is on the order of 400,000. Their problem in speech communication is due to three main factors: 1) very poor auditory reception of speech, 2) lack of speech that is intelligible to others, and 3) poor language competence (in the sense of poorly developed internal grammar and vocabulary). Lipreading and sign-language serve for limited communication but these methods cannot approach normal speech communication in flexibility and scope.

Even normal communication depends on the existence of adequate knowledge of the language. For persons deafened early in life this knowledge does not develop sufficiently, no matter how intensively they are educated. Apparently this is because normal language development depends heavily on satisfactory conditions of auditory reception of speech and the consequent oral interaction between a child and other persons.

In addition to those with early deafness, a very large number of persons experience hearing losses due to disease and aging of the sensory and neural mechanisms of hearing. This type of hearing loss cannot be alleviated by medical treatment. Current hearing aids are found to be only partially useful in overcoming this type of hearing loss.

Rationale of Research Program. Our research is designed especially to take advantage of the large accumulation of knowledge and techniques

phonetics and auditory psycholinguistics. Phonetics has provided us with detailed knowledge of speech movements and the resulting sound patterns. We can now synthesize and analyze speech automatically under computer control. Psycholinguistic research, using both natural and synthetic speech, has provided an extensive knowledge of the sound cues in speech that are the basis of speech perception.

This knowledge and technology provide an important new basis for improving speech communication for hearing-impaired persons. For example, we can build special analyzers to provide indicators for monitoring one's own speech. Several such analyzers have been incorporated in experimental prototypes of new hearing aids and voice displays. It is also easy now to synthesize special types of speech sound in order to investigate the critical sound patterns or cues to speech perception that are lacking to hearing-impaired people.

Summary of Our Research. The research of the Laboratory is both basic and applied. We consider that basic research and applied practice can interact in important ways. On one hand, effective applications depend on having good basic knowledge of the processes to be affected. On the other hand we sometimes find that attempts to apply a technique or a theory can uncover critical gaps in our basic knowledge and lead us to discover new principles of a process.

The basic research of the Laboratory is designed to improve our knowledge of impaired reception of speech due to impaired hearing. As we noted above speech sound patterns are now understood fairly well, both as to their acoustic properties and as to the normal auditory process for perceiving these properties. Therefore we are

in a position to carry out many analytical experiments on abnormal speech perception as we see it impaired by hearing deficiencies. This has been the major part of our work thus far.

We began with experiments on sound pattern discrimination, using sounds of complex composition as in speech, but not actually speech-like in the patterns to be discriminated. The aim was to explore the range of discrimination across the spectrum of hearing, covering especially the low-pitched sounds which are usually more audible to deafened persons. The sounds were noises having different pitches. We measured impaired auditory acuity of different types. We found that acuity for discriminating low-pitched sounds from each other was often better than for the middle range of pitches. However, this varied a great deal depending on the type of hearing impairment (Pickett and Martin, 1968; Martin and Pickett, 1970).

The next step was to test discrimination acuity for speech sounds. For this purpose, speech sound synthesizers were constructed and arranged for automatic control according to the listener's own sucess in discrimination. With this method, the amount of impairment might be quickly determined. Results were found to be related to the listener's ability to discriminate natural speech sounds. Vowel sound discrimination was measured first. The speech synthesizers can also produce patterns like consonant sounds and we have just completed a series of tests of discrimination for sound patterns like those of the consonants (Pickett and Martony, 1970; Martin and Pickett, 1971; Danaher and Pickett, 1973).

The perception of natural speech sounds ahs been studied by making a phonemic analysis of the confusions and substitutions that are made by various types of deaf listeners under controlled listening

conditions (Pickett, et al, 1972).

Our measurements of impaired auditory discrimination are intended to furnish basic information about the phonetic structure of impaired speech communication. This information will be useful in the design and use of hearing aids and auditory training amplifiers. These data tell us what aspects of speech can be discriminated after speech sound has been amplified enough for the impaired person to hear it.

Our Laboratory also studies the basic nature of the speech of deaf persons in relation to their hearing and language capacities. This has been only a small portion of our work thus far, but we are well-equipped to increase our effort in this field. Part of this work may be done in collaboration with the Haskins Laboratories of Yale University and Linguistics Research Laboratory of the College.

Applied research in the Laboratory investigates certain new communication aids which are based on automatic speech analysis. Two types of special aids have been investigated: 1) aids to speech reception and 2) aids to monitor one's own speech production. Some of the proposed aids employ visual display of speech patterns; others provide altered sound patterns designed to better fit the remaining hearing of deafened persons (Pickett,1968).

A speech reception aid currently being tested operates to provide visual patterns to the wearer that assist him in lipreading.

The speech-monitoring aids have been designed and built as speech training aids for deaf persons. One such aid was constructed in the Laboratory and pilot-tested at Kendall School (Pickett and Constam, 1968).

In 1967, the Laboratory sponsored a Conference on Speech-Analyzing Aids for the Deaf under a special grant from the U. S. Office of

Education. The Proceedings were edited and published (Pickett, 1968).

In addition to our work with special speech-analyzing aids we have carried out research on the function of conventional hearing aids. We remind ourselves that speech is naturally constructed around hearing, that the bulk of hearing-impaired persons have a considerable amount of residual hearing, and that they often benefit greatly from wearing hearing aids. We are convinced, however, that hearing aid use is far from optimal. There are persistent reports of poor "word clarity" and of extreme difficulty in noisy places and in reverberant rooms. To shed further light on these problems, we have carried out further research on individual adjustment procedures for hearing aids and on binaural vs monaural use of hearing aids in a room with noise and reverberation present in varying degrees (Gengel, 1971; Gengel, 1972; Nabelek and Pickett, 1974).

RECENTLY PUBLISHED PAPERS FROM THE LABORATORY

Danaher, E. M. and Pickett, J. M. Some Masking Effects Produced by Low-Frequency Vowel Formants in Persons with Sensorineural Loss, J. Speech Hear. Res., 1974, in press.

Gengel, R. W. A Frequency Response Procedure for Evaluating and Selecting Hearing Aids for Severely Deaf Children. Paper delivered at the Oticongress, Copenhagen, Denmark, 1971.

Gengel, R. W. Auditory Temporal Integration at Relatively High Masked-Threshold Levels, J. Acoust.Soc. Amer., 51, 1972, 1849-1851.

Gengel, R. W. Acceptable Speech to Noise Ratios for Aided Speech Discrimination by the Hearing-Impaired, J. Auditory Res., 11, 1971, 219-222.

Gengel, R. W. and Watson, C. S. Temporal Integration: I. Clinical Implications of a Laboratory Study. II. Additional Data from Hearing-Impaired Subjects, J. Speech Hear. Dis., 36, 1971, 213-224.

Martin, E. S. and Pickett, J.M. Sensorineural Hearing Loss and Upward Spread of Masking, J. Speech Hear. Res., 13, 1970, 426-437.

Martin, E. S., Pickett, J. M. and Colten, S. Discrimination of Vowel Formant Transitions by Listeners with Severe Sensorineural Hearing Loss. Proceedings of Symposium on Speech Communication Ability and Profound Deafness, Stockholm, 1970, G. Fant (Ed.), A. G. Bell Assoc., Washington, D. C., 1972, 81-98.

Nabelek, A. K. and Pickett J. M. Reception of Consonants in a Classroom as Affected by Monaural and Binaural Listening, Noise, Reverberation, and Hearing Aids, J. Acoust. Soc. Amer., 1974, in press.

Pickett, J. M. (Ed.). Proceedings of the Conference on Speech-Analyzing Aids for the Deaf, Amer. Ann. Deaf, 113, 1968, 116-330.

Pickett, J. M. Status of Speech-Analyzing Communication Aids for the Deaf, IEEE Trans. Audio and Electroacoustics, AU-20, #1, 1972, 3-8.

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Pickett, J. M. and Constam, A. A Visual Speech Trainer with Simplified Indication of Vowel Spectrum, Amer. Ann. Deaf, 113, 1968, 253-258.

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Pickett, J. M. and Martony, J. Low-Frequency Vowel Formation Discrimination in Deaf Listeners, J. Speech Hear. Res., 13, 1970, 347-359.

Pickett, J. M., Martin, E. S., Johnson, D., Smith, S. B., Daniel, Z., Willis, D. and Otis, W. On Patterns of Speech Feature Reception by Deaf Listeners, Proceedings of Symposium on Speech Communication Ability and Profound Deafness, Stockholm, 1970, G. Fant (Ed.), A. G. Bell Assoc., Washington, D. C., 1972, 119-133.

STAFF

The Laboratory staff is as follows:

James M. Pickett, Director Professor of Speech Communication Research, Ph. D., 1952, Brown University, in experimental psychology

Regan Quinn, Research Assistant (GS-9), M. S., 1973, Gallaudet College, in audiology.

Zeda Daniel, Administrative Secretary (GS-9), employed at Gallaudet College 1964 to present.

Mary Patricia Wilson, Research Assistant (GS-9), M. S., 1974, Gallaudet College, in audiology.

Fred D. Brandt, Research Technical Advisor (GS-11), B. A., 1967, Columbia Union College, in physics.

Piro Suvanasuthi, Research Electronic Assistant (GS-8), M. E. E., 1972, Catholic University of America, in electrical engineering.

David Talkin, Scientific Programmer-Technician (GS-9), employed at Gallaudet College for approximately six years.

FACILITIES

The Sensory Communication Research Laboratory is located in the Hearing and Speech Center, Gallaudet College. The Center is a modern audiologic and teaching facility. It is a spacious physical plant with special rooms and arrangements for research, clinical work, and teaching.

The Sensory Communication Research Laboratory includes four rooms arranged in two suites for experimental auditory research. One suite is a large experimental control room adjacent to two listening rooms (large IAC rooms). The Control room contains sound generators, calibrators, moitor equipment, and test-programming equipment. This arrangement is specifically designed to test two subjects simultaneously and it is used for auditory research. The other suite consists of a control area and a subject listening area. There are five additional rooms used for offices, computer room, and an electronic design shop.

A sound treated room with controllable reverberation time is located in the Kendall Demonstration Elementary School for the Deaf on the Gallaudet campus. It is used as an acoustically variable classroom for children, but it is available for our research.

An anechoic chamber is also available in the Physics Department. This room is specially constructed for sound isolation from outside noises. It is available full-time to our Laboratory for an indefinite period. Currently we carry out pilot tests in this room of listening to speech through hearing aids under various conditions of frequency response setting and tests of new electronic aids for the deaf

An electronic design facility is part of the Laboratory. It is staffed by a Research Electronic Technical Advisor (B. A., Physics) and a Research Electronic Assistant. The design facility serves only the Laboratory. It provides design and construction of logic programming systems, computer interfacing units, and computer programming.

The main computer system of the Laboratory consists of a PDP-12 with 12K core, 256K fixed-head and 831K Movable-head disc storage, programmable clock, A-D conversion, DEC scope, DEC tape, paper tape an electrostatic line printer, and hardware arithmatic options. A PDP-8E and 1.6 M word disc are used for producing and controlling sound discrimination and identification tests. In addition the College central computer, a PDP-10, is available for large-scale problems and time-shared functions. We use these computer facilities for speech analysis and synthesis and for data reduction.

Audiologic services are provided by the Hearing and Speech Center for out-patients and for students of the College. There are about 1000 resident undergraduates in the College. A modern experimental preschool of 40 deaf children is an integral part of the Center. The Center also houses much of the senior teaching staff of the Graduate School giving advanced training leading to the Master's degree in audiology, or in education of the deaf. A pre-to-elementary school population of about 220 deaf pupils is available on the campus at the Kendall School which is one of the laboratory schools for the Graduate Program. Deaf high school students attend the Gallaudet Model Secondary School.

LABORATORY FUNDING

The work of the Laboratory is currently carried out with support from three sources, the Gallaudet College operating funds, a program

from the Social and Rehabilitation Service, and (3) a grant from the U. S. Public Health Service.

The College funds currently consist of $72,646 per year, mostly for salaries. This source of funding has been continuous and expanding since the beginning of the Laboratory and we expect it to continue in the same relative amount.

The grant funds currently total $111,032 per year.

OFFICE OF DEMOGRAPHIC STUDIES

Raymond Trybus, Director, ODS

BACKGROUND AND PURPOSE

The purpose of the Office of Demographic Studies and its Annual Survey of Hearing Impaired Children and Youth is to provide, on a national scale, information and data-oriented services which can assist in improving and expanding the educational opportunities available to hearing impaired persons. In order to develop this information and provide these services, it attempts to collect data on the entire hearing impaired population through college age in the United States. This population includes those who are receiving special educational services related to their hearing impairment, those who have been diagnosed as hearing impaired but who are not receiving such special educational services, and those who are in fact hearing impaired but whose hearing loss has not yet been diagnosed. The work of the Office has concentrated, to date, on the individuals in the first group, those who are receiving special educational services related to their hearing impairment.

The Annual Survey was begun in response to the concern of educators, audiologists, legislators, psycholigists, and others working in the field of hearing impairment, indicating the need for national data of this type. The Survey began national operations in May, 1968, following two years of pilot and developmental work in a five state area to determine the operational feasibility of a program of this nature. The initial funding was supplied by the Bureau of Education for the Handicapped, U.S. Department of Health, Education and Welfare. Continued financial support from 1972-1974 was provided by the National Institute of Education and by Gallaudet College. Present funding

is provided solely by Gallaudet College, whose programs and services receive substantial support from the Department of Health, Education and Welfare.

POLICIES

The Office actively encourages the use of its information and services and the original data on which they are based, by administrators, researchers, teachers and other professionals who are providing services to the hearing impaired people, as well as by other individuals and groups devoted to improving the results of special education for hearing impaired persons.

In its work of developing and disseminating useful information, the Office has the benefit of the guidance and advice of its National Advisory Committee. Among its members are hearing and deaf individuals, administrators, researchers, educators, and specialists from other areas within the field of hearing impairment. Every attempt is made to maintain a wide diversity of interests and competencies, as well as geographic representation, among its members. On questions of a technical nature, consultants from specialized fields are utilized as particular needs arise.

While the Office is intended to be permanent and national in scope, it does not aim to replace or absorb the work of other programs at the state or local level which are devoted to the collection and dissemination of information on hearing impaire children and youth. Rather, it seeks to facilitate their work through cooperation whenever this is possible. Nor does the Office view itself as the center for all types of research in this field. It focuses its activities on collecting and disseminating national baseline data on selected topics of general concern to those interested in the education of hearing impaired children and youth. It seeks to make available

to researchers, administrators, and other professionals the vast amount of information it possesses and any special services it can render to them.

One restriction which is observed by the Office is that no data will be released which permits the identification of an individual student or cooperating program. Exception to this occurs only when a written release is obtained from the program supplying the information. Otherwise, independent researchers using the data of the Annual Survey have access only to summary statistics or coded information.

Since the Office of Demographic Studies attempts to promote the use of its data by those whose judgments and decisions will have a direct or indirect bearing on the education of hearing impaired individuals, it recognizes a responsibility to devote a part of its resources to the evaluationand improvement of the quality of the information collected and disseminated. This is particularly important because it seeks to establish national norms on the basic characteristics of hearing impaired children and youth. Thus, in its dissemination of information, the Office makes every effort to properly qualify its data and indicate any limitations associated with it.

The Office of Demographic Studies seeks to avoid associating itself with an established position relating to controversial issues within the field of educating hearing impaired individuals. Thus, it does not interpret its own data. Rather, it seeks to facilitate the use of its data by reputable individuals or organizations that may themselves wish to draw policy implications or test research hypotheses that are related to these issues.

DATA COLLECTION

During the first year of the Annual Survey, the 1968-69 school year, data collection activities were directed towards all schools

for the deaf and a representative sample (15%) of all special classes. In addition, records on students who were receiving itinerant services were obtained in total from two states and in part from several states. In all 25,363 individual records were collected.

Since then the Survey has greatly increased its coverage of the population. Over 550 reporting sources with approximately 41,000 students enrolled in their programs cooperated with the Annual Survey for the 1970-71 school year. During the 1971-72 school year, data on approximately 42,000 hearing impaired students from about 640 reporting sources were obtained. Data on almost 44,000 students in 712 programs were received for the 1972-73 school year; these 44,000 students represented approximately 80% of the estimated 54,000 children in special education programs for hearing impaired children.

PROGRAM SERVICES AND PUBLICATION OF THE DATA

The Office is accumulating a large volume of statistical data. The processing and dissemination of this information hold wide implications and potential benefits for educational, auliological, medical, psychological, legislative and other services to the hearing impaired. Toward the goal of fully utilizing the data, the program makes data available to independent investigators for research purposes, including master' theses, doctoral dissertations, institutional level research programs, private studies, etc. Competent researchers are encouraged to propose detailed analyses of the information to further increase its usefulness. In addition to the direct use of the accumulated data, a second significant value of this large volume of data is the potential it provides [illegible]lecting well-described samples on a national basis for special studies of relevant variables.

The Test Department of the Office has completed three National

Academic Achievement Testing Programs, in 1969, 1971, and 1974. One result of the 1974 achievement testing program will be the production of national norms for hearing impaired students based on a special version of the 1973 edition of the Stanford Achievement Test revised for these students. The Test Department of the Office is able to supply the revised test materials to educational programs interested in using them to assess their hearing impaired students. Work is also underway on analysis of the vast amount of data generated by the achievement testing projects and by other collections of test information, such as the 22,000 nonverbal I.Q. test scores gathered in recent years.

The Office also provides each participating educational program with tabulations of the characteristics of its own students, as compared with national distributions and with other significant distributions such as those for the state or region in which the program is located. Programs wishing to obtain punch cards or magnetic tape compilations of data for their programs for futher analysis are provided with these materials. Standard Record Forms are available from the Office, as are the consulting services of the Office staff for programs wishing to develop or improve their data collection and record-keeping systems in the areas of student characteristics and educational performance.

The unique value of the project lies in its national perspective and in the nationwide network of contacts and working relationships which it has developed in the six years of its existence and which underlies all its activities. It is the maintenance of this network and the accumulated experience in its use which allows the Office of Demographic Studies to provide the national baseline data needed

by the field of education of hearing impaired children on a continuing basis.

The Office reports much of its data in its own publications series. A listing of the publications issued to date may be obtained from the ODS Office. Reporting also takes the form of articles submitted for publication in professional journals, reports made at professional meetings and conventions, and lectures or seminars at University training programs and other gatherings or associations to which staff members of the Office have been requested to make presentations.

FUTURE PLANS

During its six years of operation, the Office has devoted most of its resources to gathering basic demographic information on hearing impaired students and to the development and standardization of achievement testing procedures for these students. Much attention has been paid to extending the breadth and quality of the data collection, analysis, and reporting.

As the description of the population of hearing impaired students has improved, it has become possible to begin a series of special studies on well-selected samples of these students. Sample studies are currently underway in which families of hearing impaired students and their classroom teachers are providing further information of relevance to the educational process. The scoring results from the National Achievement Test Standardization Program of 1974 are being analyzed, and national norms for hearing impaired students will be available later in 1975. A survey of the educational programs themselves focusing on the instructional staff, supporting staff, facilities, and services of these programs has been completed, and the results

of this survey will be published in the near future.

Projects currently under consideration include studies of hearing impaired students in mainstream educational settings and of the vocational training and career education opportunities for hearing impaired students, possibly including some measures of student performance in these areas. Increasing national attention is also being given to the question of achievement or learning in the preschool programs for hearing impaired children; this may also be as area of future activity for the Office.

The success of the Office will ultimately be measured not only by the volume of data collected and reports published, but by the significance of the services it is able to render to these persons who work with hearing impaired children and youth.

FACULTY RESEARCH IN THE EDUCATIONAL PROCESS: EXAMPLES OF CURRENT RESEARCH ON PERCEPTION AND READING

Horace N. Reynolds, Chairman

Department of Psychology

I would like to begin with some general comments about the educational value of research, followed by some examples of my own research ideas and projects.

Basically, the educational process involves teaching and learning on the part of both the student and the instructor. The student's primary responsibility, of course, is in the area of learning; but the student also assumes the role of teacher, for example when participating in class discussions, explaining things to other students, and even in answering examination questions. The classroom teacher is involved not only in disseminating information (the teaching function), but also in acquiring new information. In many ways, it is the capacity and inclination to acquire new information which is the mark of an exceptional teacher. For a faculty member, the learning process occurs in many ways, such as reading professional literature, and discussions with students and colleagues. But often the most significant learning occurs when a faculty member conducts his own research on a topic of professional interest and importance.

When a faculty member assumes the role of researcher, he becomes involved in a process of learning through discovery which adds to the general foundation of knowledge, which is then disseminated

through the instructional process. Looked at this way, research and teaching are interrelated and interdependent functions. The good teacher must research his topics before teaching to maintain currency of knowledge and adequate depth of comprehension. The researcher becomes a teacher through the dissemination of his research results, if not through presentation of his findings in the classroom.

Thus, research is a natural function for the faculty member whose primary responsibilities are in teaching, and it might be expected that involvement in research may increase one's effectiveness as an instructor. In fact, a number of recent studies suggest that this is often the case.

If research is a desirable function of the faculty member, then the college or university must provide an environment which encourages and stimulates research activity. This can be done by rewarding individuals for research effort through merit increases and promotion; by providing facilities and even financial support (when possible) for faculty research; by providing release time from teaching responsibilities to enable a faculty member to pursue a promising research idea; and by encouraging faculty to devote sabbatical leaves to the development of research. In such a supportive environment, a nucleus of research-oriented faculty members can provide an incentive for other faculty to initiate their own research. For most professionals, research is an intrinsically rewarding activity which, when established as a goal by the institution, can proliferate rapidly. A motivated faculty member will make time for research through more careful management of time and effort. This can be done without a detrimental effect on teaching; in fact, often the

effect is beneficial.

The symbiotic relationship between research and teaching is also revealed by the fact that teaching experience is often the source of research ideas. For example, my own experience in teaching Gallaudet students made it painfully clear that the average deaf student has a considerably lower reading level than the average hearing college student. Of course, the language and reading deficiencies which usually result from prelingual deafness are widely reported in the literature, but my own experience with the problem in a teaching situation sharpened my awareness of the magnitude of the problem. Shortly after I came to Gallaudet, I began doing some research on reading. My studies with Gallaudet students have been largely descriptive so far, but have revealed that the average Prep student reads at a level comparable to a seventh or eighth grade level for hearing students. This is far better than the average 16-year old deaf student outside Gallaudet who, according to Office of Demographic Studies findings, reads at a fourth grade level - - at the threshold of "functional literacy." However, it is clear that the average Gallaudet student should have difficulty reading advanced college-level texts, and the personal experience of almost every teacher at Gallaudet confirms this.

Some of my work with prep students in the Experimental Prep Project revealed some other things about reading. If we look at the questions following the reading selections on reading tests, we can divide them into various categories of reading tasks. We can then compare the performance of our students across these reading skills. Very generally, it turns out that our students do relatively better on questions involving concrete facts, details, and relation-

ships provided in the reading selection. They have more difficulty with questions which require interpretation, inference, or understanding the implications of what they read. These results are not surprising, but provide part of an empirical basis for the development of remedial reading programs.

My studies on reading have also revealed discouragingly little improvement in reading ability from beginning to end of the Prep year. This is true in spite of the intensive instruction in English and practice in reading which students receive during the prep year.

Related to this, a study which I just completed this spring, showed significantly better reading test performance by sophomores and seniors (ninth or tenth grade level) than by Prep students (seventh grade level) at Gallaudet. However, most of this difference appears to be attributable to attrition, which screens out academically weaker students between Prep and sophomore years. Although my analysis of these data is not complete, there is the strong possibility that less measurable improvement in reading ability takes place during four years of college than might be hoped for. I am reluctant to suggest this without further research, but I do have some confidence in the validity of these results.

These findings may indicate the importance of developing better programs of instruction in reading for deaf children at the earliest possible age, during the critical period for language learning. By the time a student reaches college age, it may be too late in his psychoeducational development to achieve substantial improvements in reading ability -- at least given our present level of educational sophistication.

A second source of research ideas is personal observation and

anecdotal information. For some time I have heard suggestions that deaf persons have superior visual abilities, as a form of compensation for their auditory deficit. In addition, I have noticed that some of my students appear to be easily distracted by visual stimuli occurring in the peripheral field of view. Since my background is in the field of visual perception, I am in the process of studying some of the visual capabilities of deaf individuals.

For example, I am planning an experiment to study attentiveness to peripheral visual stimulation in deaf and hearing subjects. It is reasonable to hypothesize that deaf persons maintain awareness of events going on in their peripheral environment by developing greater attentiveness or sensitivity to optical information coming in through the peripheral visual system. Hearing people, by comparison, might not develop such a high level of peripheral visual sensitivity, because they can rely more on audition to maintain contact with events occurring in their peripheral environment.

Another perceptual problem which I am currently studying is visual, sequential information processing. Because deaf individual learn to use their visual system to receive the rapid, sequentially-presented symbols involved in signing and fingerspelling, they may develop a superior visual ability to process many kinds of sequential information. This hypothesis is currently being studied using computer-generated letter and word displays, and initial results are being analyzed.

It is anticipated that this research will be extended to experimental studies of other visual characteristics of the deaf. The implications of such research can be simply stated. If the deaf have developed visual capabilities which differ from those of hearing

people, knowledge of these characteristics might be important in understanding how visual information should be presented to the deaf. Such knowledge might have practical application in many areas such as the development of improved visual aids and instructional materials for deaf individuals.

A final area of investigation which I would like to mention is concerned with "Communication Distance" - the interpersonal separation at which people feel comfortable when communicating in a face-to-face situation. Communication distance varies between cultures, as Hall has shown, and might differ between deaf and hearing people. For one thing, when two deaf people communicate by signing, a certain amount of physical space between the individuals is required for signing to take place. For this and other reasons, we have hypothesized that communication distance will be different for deaf people communicating by signs than for hearing people communicating by voice. During the past year, Mary Moyer and I have been studying this problem experimentally. Mary is a student from Washington College, who spent her senior year at Gallaudet and wrote her Senior paper on this research.

RESEARCH ON COMMUNICATION DISTANCE WITH DEAF AND HEARING SUBJECTS

Mary Mover, Psychology Major

This is an experiment on communication distance in profoundly hearing-impaired and hearing students. Communication distance is the space you place between yourself and others during a conversation.

The hypothesis of the experiment was: a significant difference will be found in the communication distance between hearing-impaired students and hearing students in a controlled standing dyad situation.

The subjects in the experiment were divided into two groups: hearing-impaired and hearing. The hearing-impaired women were undergraduate students from Gallaudet College and were chosen on the basis of being a) profoundly hearing-impaired, b) prelingually hearing-impaired, and c) have used Sign Language for at least 10 years. The hearing women were either graduate students or special undergraduate students from Gallaudet College.

In the experiment, each S entered a room where an E was sitting. E got up as the student walked in and both conversed briefly while still standing. Then the student sat down to take 2 tests. This E was a hearing person who communicated in voice with the hearing students and in sign with the hearing-impaired students. Because E was proficient in Ameslan, it was assumed E seemed like a hearing-impaired

person to hearing impaired students. While E and the student were talking, another E snapped 3 pictures of the 2 people through a one way mirror. These pictures were used to record and measure the communication distance between the E and the student.

The results of the measurements of the pictures were that hearing-impaired women stand significantly further apart from the E than did the hearing women.

The most important conclusion of this experiment is that hearing-impaired femaiestudents who are strangers probably stand farther apart during a conversation in a controlled standing dyad situation than do female students.

One value of this finding is that any person communicating in [illegible] language with a profoundly hearing-impaired person who [illegible] by hearing-impaired and who has known sign [illegible] years need not be offended when the hearing-[illegible]son seems to stand further apart during a conversation. The hearing-impaired person is only standing at his most comfortable communication distance.

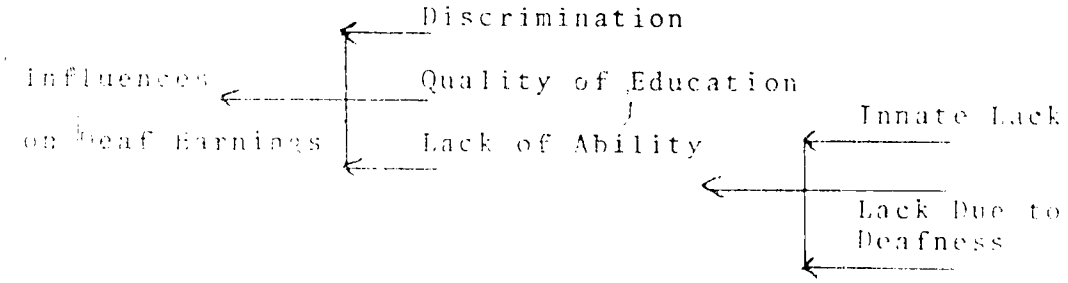
EDUCATION, INCOME AND JOB ACCESS

Ira Winaker, Department of Economics

As you can tell from the title this paper intends to cover three broad areas relating to the cultural and social orientation of deaf individuals. It will become evident in a few minutes that some knowledge exists in the area of income determinants of the deaf, and that a great deal of knowledge is needed to fill the gaps in the two remaining areas.

I thought it best to begin with the determination of deaf income, and show how education and job access could affect the earnings of the deaf. In addition, areas of research need as I perceive them will be pointed out.

While data exists on the income determinants of hearing impaired females more extensive income data exists for hearing impaired males. Because of this I will focus in this section on the earning determinants of deaf males. The earnings of a hearing impaired individual can be pictured as depending on the following:



I began with this 'model' of income determination and tried to quantify various inputs in order to test the significance of each of these parameters as income determinants.

As all of you know the gap between what social science researchers ideally need in terms of data and what is usually available is immense. The attempt at quantification of the variables in this study was not an exception. However, certain parameters were available for inclusion in a 'model' of the income determination of deaf male college graduates.

The variables that were used in the model were the individual's LR, SP and HR abilities, if the individual had an MA degree or not, the person's father's s-e class, work experience, the individual's ability measured by GRE quantitative score and an occupational dummy variable.

The results of this analysis was as follows:

It can be seen from the regression equations (see chart on p. 15) that high interactive communication abilities added about $1,000 to the yearly earnings of these deaf males (nonfederally employed). Having a Master's Degree resulted in an $1,800 per year earnings differential, quantitative ability added approximately $7.00 per score point to earnings and work experience increased earnings approximately $350 for each year of work. On the negative side it was found that Teacher's earnings are approximately $1,000 less than nonteachers'. Thus, except for the insignificance of the individual's father's socio-economic class, all the parameters had the expected sign and were significant determinants of earnings.

Thus as has been observed one of the significant income [illegible] was the occupation variable. In fact, a similar study of hearing impaired teaching females revealed that the

only significant parameter was their level of education.

A further analysis of the impact of the Master's Degree on both hearing impaired males and females reveals that the possession of this degree increased the human capital of nonfederally employed males between $21,000 (8.0%) and $30,000 (5.0%) and increased the human capital of nonfederally employed teaching females between $26,000 (8.0%) and $37,000 (5.0%).

These two findings have led me to begin a study on the production of education among deaf residential schools. Because of the increasing awareness of the impact education has on our economy, economists have begun to devote more time to this type of analysis. One reason for this is that since one of the ends of education is an increase in human capital an understanding of how education is produced becomes crucial.

At this time the question of how education is produced within the residential school system cannot be answered. However I do have a list of questions and some observations on the production of education.

In general the individual that is investigating the production of education within a school system will have in his own mind a clear defined school's output or production [illegible]. However, he must be aware of certain problems. One problem that may occur is if the school or total school system is not attempting to maximize the same output that a researcher assumes it is maximizing. For example, while the

overall goal of schools for deaf students may be the production of knowledge, a high priority in the students' early years may be placed on the improvement of lipreading and speech abilities. If this is true and the investigators' assumption is not correct the result may be a misspecification of the production function. Thus, the specification of the 'goals' or schools serving deaf students is an area that should be explored. However, it may be extremely difficult to arrive at a definitive answer to this question.

Another related problem can occur even if both the school and researcher do agree on the 'output' goal of the school. This problem will occur if the students within the school system do not place as high a priority on this goal as does the school. If this is the case, even if the inputs used by the school (or school system) would maximize output the fact that students do not feel that this output should be maximized can result in a misspecification of the production function. The specification of what students themselves feel are or should be the output goals of schools is, therefore, another area that should probably be researched.

Up until now I have briefly focused on the output of schools. I would not like to change direction and focus on another crucial area--namely educational inputs.

[illegible] research in this area has shown that [illegible] have been important inputs in educational achievement. However, [illegible] the lack of significance of this variable [illegible] determine the question is

raised in my mind if this would be a significant determinant of educational achievement among hearing impaired students.

In addition, other social variables may be important from the standpoint of deaf education. Some of the variables that come readily to mind are (1) if the parents of the deaf child are hearing impaired or not, (2) the type of communication used in the home, (3) the number of siblings in the family and if the sibblings are hearing impaired or not. Research in this area is currently being pursued.

Another vital educational input is obviously the students themselves. Since standardized test scores are generally used as the measure of school output a correct determination of this output requires that students all try equally 'hard' on these tests. If this is not the case, scores used to measure the output of the school or school system will not be a true reflection of school production. Research in this area has shown that students from different backgrounds do not all try equally 'hard' on tests. However to the best of my knowledge no research has been carried out in this area among hearing impaired students.

After the hearing impaired student has finished his/her schooling and before he/she can begin earning a living it is obvious that jobs must be available and that the hearing impaired individual must be able to have access to these jobs. While some research has been carried out on the [illegible] distribution up until now no one has studied the relation between public transportation and job

access for the hearing impaired.

Research in this area is currently being undertaken here at Gallaudet. Basically, this research will try to determine the obstacles the hearing impaired individual faces in trying to interact with public transportation systems in our metro area. In addition, anticipated future problems that will likely occur once our subway system begins will also be evaluated.

More specifically this study will procede in the following manner: First, a mail survey of selected hearing impaired individuals in the Washington Metro Area will be conducted. Second, interviews will be held with a smaller subsample of the survey group in order to obtain more detailed knowledge of the problems these persons have encountered with public transportation.

It is hoped that these two sources will provide a problem 'base'. Proposed solutions to these problems as well as a cost benefit analysis of these solutions will be made. The final step in the study will be a determination of the cost impact on the metro areas public tax system.

REGRESSION EQUATIONS

Independent Variable	Regression Coefficient	t
Regression 1--Males Nonfederally Employed		
Constant term	$4,220.90	4.15[c]
Communication ability (dummy) (lipreading (1-2) - speech (1-3) - hearing (1-3) = 1)	1,040.80	2.03[d]
Education level (MA=1)	1,849.15	3.39[c]
Ability (quantitative)	6.90	3.20[c]
Father's socioeconomic class	-0.75	-0.09
Work experience	351.30	4.76[c]
Occupation (dummy) (teaching=1)	-924.65	-2.09[d]
R^2=0.31	R=0.55	Degrees of Freedom=94

[c]Significant (one-tailed) at the 0.5 percent level.

[d]Significant (one-tailed) at the 2.5 percent level.

[e]Significant (one-tailed) at the 5.0 percent level.

[f]Significant (one-tailed) at the 10.0 percent level.

A PROPOSAL FOR A CENTER FOR RESEARCH ON COCHLEAR IMPLANTS

Henry Tobin, Graduate School

Something new is happening in the area of deafness and the attempt to try to improve hearing ability. Most of this work has been going on in California. This refers to the cochlear implant. Some people are now calling it the auditory implant. What does this involve? It involves the direct electrical stimulation of the inner ear. This is done by surgery. There is an electrode inserted in the round window of the cochlea. That electrode is attached to an amplifying device like a hearing aid. A microphone picks up the sound and transduces it into electric stimulus in the ear. What does that person perceive when he receives that form of stimulation? Is it real speech? No, not exactly. It is almost like speech. It seems to follow the wave envelope and rhythm pattern of speech but it is still not speech. Who are the people who are receiving this cochlear implant? Specifically, only individuals who have no ability to hear anything. If an individual can already hear wave envelope information with a hearing aid, then he is really not a good candidate for a cochlear implant. The individual should be someone who has no ability to hear or use a hearing aid. Who are now the best candidates? Those who are post lingually deafened. Why? Because they already know something about the speech signal. They are familiar with the way language works as it is encoded through speech. Having this cochlear

implant in the ear does not immediately permit the person to catch on to that new information. What is required is a very lengthy program of training in audiologic habilitation. We think that with individuals who are born prelingually deaf the process will be even longer. Why is this of concern to us? Those of us here at Gallaudet feel a sense of responsibility toward helping hearing impaired individuals to improve their quality of life. This new technique represents anopportunity to obtain some hearing if you have no hearing. If a sufficient number of VIII nerve fibers are viable, the totally deaf individual could be a candidate for the procedure. We have recently submitted a proposal to NIH, National Institute of Neurological Communication Diseases and Stroke. The proposal covers a period of seven years and the members of the Committee are myself, Dr. Balas, Dr. Pickett, Dr. Cornett, and Dr. Williams. We are very much concerned that we be prepared to contribute to helping those hearing impaired individuals who are going to receive an auditory implant. We know that there will be individuals who will receive this implant even though we are not selecting them to be part of the research program. We need to be ready to work with them to help them adjust and learn to make the most effective use of their new auditory signal. This procedure is not the same thing as acupuncture. This will probably not go away. Acupuncture was a fad--just that, a fad. The cochlear implant seems to offer real hope at least for [illegible]

ing something approximating speech.

Dr. Ballas: Announcement of film regarding the cochlear implant.

Question: Cochlear implants: Any physical change that is caused to the inner ear by the implant?

Answer: There is no significant change in the inner ear--no damage as a result as long as the electrode is not damaging any of the structure of the cochlear tissues. There is talk about using multiple electrodes instead of a single electrode but this may be damaging. One individual who has had an implant for several years had had no difficulty with the ear or wire.

Question: Is any work being done on cortical implants?

Answer: Yes. Dr. Dobelle in Utah has done some work in this area but only with individuals who have had their head opened for other reasons. It is a difficult procedure. The auditory cortex is buried and not as easily accessible as the visual cortex. There is also the danger of infection. This procedure is very far down the road.

RESEARCH NEEDS OF THE GALLAUDET COLLEGE COMMUNITY

Robbin Battison, Linguistics Research Laboratory

For this meeting, I decided not to talk about my own research on language, not because I don't think it will interest you, but because there are some things which bother me about the state of research on campus, and I want you to start worrying about them, too.

In the title I included the word "community" because Gallaudet College is more than just a college--it's a very special community of people. It employs many of its own graduates, has a strong alumni association, many of its graduates work in neighboring states in fields related to deaf education, and in many other ways the college serves as a center for community, national and international activities and gatherings. I disagree with the view that Gallaudet College is just another small liberal arts college that happens to have deaf students. It is a special place because of the people who go to school here, work here, teach here, remain in the area after graduation, marry each other, and develop their own ways of communicating and interacting with each other. The Gallaudet College community is an educational community of deaf people who are adjusting to life by adjusting to each other and by evolving new ways of interacting. None of these things are well understood by anyone.

During these two-day proceedings, you've heard the phrase "social adjustment of deaf people" a number of times. Per-

sonally, I don't like to think of the social aspects of deaf people's lives in terms of "adjustment", but in terms of "living". The big question for me is not how deaf people adjust to the demands and standards of the hearing world, but how they live when they're relatively unhampered by pressures from hearing people. This is a rare situation for many deaf people, and it is something open to study here at Gallaudet College. The big question is how deaf people conduct their lives and their business--how normal deaf people interact and communicate with each other. The greatest resource of Gallaudet College is its people, and its greatest research efforts should be centered on the lives of these people.

One of the interesting things about most organizations and institutions "serving" deaf people, both adults and children, is that there is a large emphasis on the work "deafness". Deafness starts as a medical disorder and taints the person who has it. Deafness means that something is wrong, wrong with the ears. People who work in speech and hearing sciences are fond of classifying deafness as a language pathology or as a communication disorder, as well as a handicap. And the general public and many people in deaf-related professions regard it as a handicap. These develop into stigmatized labels that haunt the lives of deaf people as they progress from one service institution to another--from the speech and hearing clinic to the pre-school to the the school to the technical training institute or college, or later to a vocational rehabilitation counselor or other rehabilitation services.

Alternatives to labels and stigmatization are possible.

One of the highlights of a recent conference held in Chicago titled, "First National Symposium on the Mental Health of Deaf Adults and Children", took place during discussion on parent counseling. The first thing that was that there were no deaf people on the panel, despite the fact that much of the discussion up to that point had emphasized the very special effect that deaf people have on the crisis of deaf children, especially with regard to language, social adjustment, mental health, and education. During this panel discussion, a deaf man made a comment from the floor. He stated that, as a member of a family in which both parents and grandparents were deaf, he grew up feeling normal in a secure family setting. Upon entering school at the age of four, however, he discovered that he was both abnormal and handicapped. The attitudes and policies of the people in the schools made him feel that way about himself. (This man graduated from Gallaudet 10 years ago and now has a PhD.) It is the schools and other institutions that make deaf people feel inferior and handicapped, and thus retard their development by tarnishing their self-image. I suggest that the root cause of this attitude on the part of institutions is the emphasis on deafness as an affliction, rather than as simply a difference; and emphasis on forced change and conformity instead of acceptance.

I suggest that we move the emphasis from deafness to deaf people here at Gallaudet, and this has much to say about

how we re [illegible] priorities on campus. There are certain [illegible] are not being asked, but which demand [illegible] some of them with you.

As Dr. [illegible] has suggested, administrators and faculty here have very [illegible] of how students regard Gallaudet College or the education they receive here. Since [illegible] deaf students, we should know the feelings and beliefs [illegible] students on this campus and their attitudes towards the educational process. How does Gallaudet College, through the attitudes and policies of its faculty and administrators, make the student feel about his or her education?

How many of you here in the audience know what it's like to live here as a student? Has anyone visited a student dormitory lately to see what it's like? What are the special problems of students on our campus and what services exist to solve them? Are they effective and are they geared to the needs of the students? From my contact with students, I know that there is a stigma attached to being seen near the [illegible] Center although the reasons for the stigma and its effect on the effectiveness [illegible] counseling programs are not known. Similarly, some students feel ashamed of seeking birth control [illegible] even when it is off-campus. When students' attitudes and beliefs interfere with their receiving the best [illegible] available, then someone should try and determine what causes the students to feel the way they do. [illegible] is now looking for [illegible] behavior, and this type of

r . . . . l . . . . . ement, because it contributes to the betterment of the student's total life here at colle . . .

. . . . is a favorite word today, why not l . . . at the adjustment of students to student life here? Peo- . . . rrive here with diverse backgrounds and enter a . . . . . . lization process that is part of an institution. Students en- ter Gallaudet with different educational backgrounds, different . . . . , and different ways of communicating with each other. Gallaudet students are not one homogeneous group, but . . . . according to group affinities . . . . up identities, often with important social consequen . . . . individual student. These issues are currently being explored by Carol . . . . . and . . . . Markowicz of the Linguistics Research Lab, and . . . . of Auxiliary Services. The more we know about the . . . . facing a student, the better we can offer . . . .

The situation we are faced with is a touchy one--some . . . . pted and others are ostracized on the basis . . . . . . communication skills. Our knowledge of students . . . . include the kinds of things in culture and lang- . . . . . which contribute to forces of separation and ostracism, ... interaction that lead to integration.

. . . . spend some time discussing interaction between . . . . people, because it affects all of us. What . . . . Gallaudet College . . . . In particular, ...

teraction between deaf students and hearing faculty, because that is where much of the tension is.

Many hearing faculty, whether tenured or not, cannot communicate adequately with their students; students report that they get virtually nothing from courses taught be these people. But don't take my word for it. Ask the students themselves--or better yet, hire an outside researcher to ask the students about how their teachers communicate, because the students will lie to you. They've been lying for years, because they see no alternative to the weak communicative situation, because they feel powerless to change things and because they do not feel competent to pass judgment on the communicative skills of others. I suggest we start listening to students tell about the communication skills of teachers, instead of the other way around.

If there are teachers who cannot communicate with their students, what does this say about the validity of the sign language evaluation administered to faculty? What does this say about hiring and promotional practices based on language skills? How does this relate to the quality of teaching, and protecting the basic rights of students in the classroom?

How do deaf faculty compare with hearing faculty in terms of communicating with their students, grading policies, and offering models for leadership and scholastic endeavors? I think that such areas would show a difference. What do you [illegible] about the track record of the users of the good communication and pass by the poor ones? How is classroom

[illegible] at the department level, and how are advisors assigned? There are many ways of approaching each of these problems, but, unfortunately, only one of them will protect the rights of the students.

These are some of the questions I've been worried about, partly out of concern and partly out of curiosity, but there are many other people who are clamoring for information like this. There are other schools for the deaf, social service agencies, teacher training institutes, mental health services, the mass media, medical services, and organizations of the deaf. They have a need to know how deaf adults spend their time, what concerns them, and how they view the world, themselves, and each other. There is a need for information which can only be filled by the right kinds of research--research that can be undertaken here at Gallaudet College. Will these people look to Gallaudet for the answers, or will they look elsewhere?

You've already heard one proposal this morning for the establishment of a research institution. I'd like to make a slightly different proposal. I suggest that we establish on this campus an Institute for Research on Deaf Culture and Language to investigate some of the pressing socially- and culturally-related questions that have arisen from the presentations at this symposium. I do not mean a research institute as an administrative unit, but as a loose federation of [illegible] and individual researchers who have input from the community and the full support (monetary and other-

wise) from the administration. The loose federation of cooperating laboratories exists to some extent right now; what we desire is a pledge of support from the administration that will allow us to continue serving the Gallaudet College community in this fashion.

Let me finish with a note on research priorities, because this is one of the topics of the symposium. With all due respect to the people here who do work in the speech and hearing sciences, many of whom I respect as both friends and colleagues, it is time that they take notice of deaf society and deaf culture. Whether discussing hearing aids, cochlear transplants, auditory habilitation, speech training, or any other services available to deaf people, it is important to focus on the social facts of deafness, and what the deaf person wants for himself or herself. Deaf people, as part of a subculture with different standards of behavior and different values, do not necessarily want to become like hearing people. Deaf people don't necessarily like or trust hearing people. It is always hearing people who are trying to "help" the deaf person act as much as possible like a hearing person in language and behavior. What is needed is less of this type of "help" and more understanding, acceptance, and respect for people who have a different way of life.

NEW PROFESSOR IN SOCIOLOGY

Robert Hiltt, Department of Sociology

Rather than talk about my own research, I would like simply to get acquainted a bit and to discuss how we might exchange and share knowledge and abilities. I assume all of you are interested in research; that is evident by your participation in this meeting. I also assume that each of you has a specialized knowledge of some particular area. Finally, I assume that you sometimes find yourself involved in research that touches on some outside area of knowledge, that takes you beyond your own specialization. When this happens, it is important that we know how to draw on the human resources of a university, to seek out those who know what we need to know, to operate as a real community of scholars. I would like to encourage you as researchers to practice sharing your knowledge and abilities with each other.

Personally, I offer my services to you. My own special area of knowledge is research methodology--study design, statistical methods, computer applications and the like. Incidentally, the Computer Center at Gallaudet College is an excellent one. For example, we have here a software package called SPSS--Statistical Package for the Social Sciences--which includes ready-made programs for a wide range of statistical procedures. The package is easy to use, and I will be happy to help any of you if you have a research project to which computer statistical analysis

might be suited. I enjoy very much getting involved with other people in their research, because it is a good way to remain a student and to keep abreast of what is happening in many different fields, in this era of narrow specialization. I hope the rest of you will feel the same way--intellectually curious about what is going on in other disciplines that your own, willing to cooperate in interdisciplinary activities, and anxious to provide expertise to those who are ignorant of what you know. The intellectual walls that separate a college faculty into isolated units, not communicating with each other, not sharing their knowledge, are destructive to the ideals of liberal education and science.

One final recommendation, relating to students and research. In the past, researchers have been accustomed to using students as subjects, as guinea pigs. It is a common joke in psychology that everything we know about human behavior is based on the study of college sophomores. "Real" people may not be like that at all. This practice will undoubtedly continue--students are, after all, handy subjects for research. But I would like to suggest that we try to get students more involved in doing research as well. Not just as flunkies, to do all the dirty work like reviewing journal literature and coding questionnaires, but as colleagues and associates.

RESEARCH AND RESEARCH SUPPORT BY THE OFFICE OF EDUCATIONAL TECHNOLOGY

D. V. Torr, Director, OET

A major function of the Office of Educational Technology is to provide resources and support for research and development activities of the college. The Office also initiates research and development. When so engaged the emphasis is upon dev ment. Any research conducted is oriented toward practica problems though more basic research would be conducted if required to support operational research.

The Office is made up of a number of components. They are the:

- Instructional Materials Research and Development Center
- Computer Center
- Instructional Materials Laboratory (see Print Shop)
- Television Production Unit
- Film Media Unit (beginning July 14, 1975)
- Technical Support Center

These components offer support to the research and development efforts of the Gallaudet community.

The Instructional Materials Research and Development Center includes persons trained and experienced in the development and evaluation of teaching materials. Their efforts are largely in support of faculty development and/or research related to instruction. They may also initiate projects, however.

The materials development staff provides a liaison between faculty members and other Office components where appropriate. An example of one way in which the staff might operate would be the development and empirical evaluation of a course of instruction using a variety of media. The Materials Developer would work with the interested faculty member or members to establish the specific outcome of the course in terms of knowledge and skills to be demonstrated by the student. Following this an instructional sequence to produce that performance would be planned. Decisions would be made to use television, slides, transparencies, printed booklets and answer sheets, and/or computer exercises as vehicles to carry the instructional message and provide the student and faculty with continual evaluation of student performance and course performance. Development of materials would begin, with photographic, television, and computer support as necessary. The completed course would be evaluated by the collection and analysis of empirical data to determine the adequacy of the course and the need for revision.

The Computer Center provides general computational support for research conducted on the campus. A number of statistical packages and programming languages are available to the researcher. They include:

- Statistical Packages for the Social Sciences (SPSS)
- Bio-Medical Programs (BMP)
- Scientific Subroutines Program (SSP)

• FORTRAN, ALGOL, COBOL, BASIC

During a recent analysis of the use made of the computer it was determined that approximately one-third of said use was for research purposes. Because of the rapid growth in computer use at Gallaudet, equipment changes will be made in July, 1975 and July, 1976 to upgrade the computer system. The number of user lines will increase from 48 to 72, core memory will double, disk memory will be augmented, and the operating speed of the central processor will increase by a factor of four (approximate).

The staff of the Computer Center is pleased to help researchers by orienting them to the system and educating them where appropriate. Because of the limited size of the staff, however, the individual researcher must, in most cases, take responsiblity for her or his own analyses. The time-sharing nature of the system used greatly facilitates the researcher's work in this regard.

Other components of the Office, i.e., the Television Production Unit, Film Media Unit, and Instructional Materials Laboratory, can support research as well. This is true particularly in the area of production of stimulus materials and tests. The Technical Support Center can on occasion be of assistance in the development of special equipment required for research. Such support is on a time available basis. The highest priority of these components is in direct support of the educational process. As Gallaudet faculty members become increasingly sophisticated in their preparation of instructional materials, competition for these re-

sources is becoming quite keen.

The Office has initiated research from time to time. An example is a contract awarded by the Public Broadcasting Service. This study was conducted in support of a larger PBS study of closed captioning. Closed captions are captions which can be seen only by television viewers who have a device for decoding captions which were transmitted in an encoded form. Open captions are captions which are not encoded and can be seen by any viewer receiving the transmitted program. An effort was made to determine to what degree hearing impaired viewers would accept the captioning system established by PBS. Hearing impaired viewers in twelve cities attended one or more of the 13 programs presented and responded to questions soliciting their opinions about the captioning which was demonstrated. While there were differences of opinion on such matters as the size of the characters, the programs to be captioned, and the completeness of the captions, in general, a system of the type demonstrated would be acceptable.

Although an attempt was made to involve representatives from the entire spectrum of hearing impaired persons, this was not accomplished to the degree which was desired. Using the information available, however, and taking into account factors of age, education, and degree of loss, it was estimated that some 4,000,000 individuals in the United States would like to have access to closed captions by having a decoder in their home.

ATTITUDES OF REHABILITATION COUNSELORS WITH THE DEAF TOWARD DEAFNESS AND DEAF PERSONS

Victor H. Galloway
Director, Office of Developmental Education,
Model Secondary School for the Deaf

Dr. Clarence Williams has asked me to describe a study which I conducted as a doctoral student and which had to do with attitudes toward deafness and deaf persons.

The general purpose of that study was to measure the attitudes of rehabilitation counselors with the deaf toward deafness and deaf persons. In addition, the study determined the relationship between the counselors' attitudes and the lengths of job experience and amounts of education they possessed. To accomplish this, the study asked the following questions:

1. Are rehabilitation counselors with the deaf generally positive or negative in their attitudes toward the deaf?
2. Do the attitudes of the hearing and hearing-impaired counselors differ significantly?
3. Does the extent of education and experience that the counselors possess play an important role in the formation of either negative or positive attitudes?
4. Do attitudes toward deafness differ significantly among the four counselor groups: (1) hearing rehabilitation counselors with the deaf, (2) hear-

ing-impaired rehabilitation counselors with the deaf, (3) general rehabilitation counselors with the deaf; and (4) professional persons in the counseling field without any work experience with or considerable exposure to deaf persons?

A questionnaire used to gather the data was mailed to a total of 467 persons in the four counselor populations. Included was a four point Likert type scale with 25 items that was developed by Cowen and his team of researchers at the University of Rochester. Of the 386 (82.7%) questionnaires returned, 119 (38.5%) were used in this study.

Descriptive data were used to analyze the demographic information. Analysis of variance and Pearson product-moment coefficients of correlation were used to test the hypotheses for significance at the .05 level.

Results showed that the typical hearing rehabilitation counselor with the deaf (RCD) is a full time counselor with the deaf, has been in the field of vocational rehabilitation 4.20 years, and has had 2.85 years experience in working with deaf and hard of hearing persons in all areas. He has had 54.30 months of education beyond secondary school and holds a Master's degree.

The typical hearing-impaired RCD may be described as a full time counselor with the deaf who has been in the field of vocational rehabilitation 4.50 years and has had 5.01 years experience in working with deaf and hard of hearing persons in all areas. He also had 59.91 months of education beyond high school and holds a Master's degree.

The typical subject in the population consisting of counselors, who have had no prior experience with a deaf caseload, although they have had considerable exposure to deaf persons, is a general counselor who does not carry deaf clients on his caseload and has not had any experience in working with deaf and hard of hearing persons. He has been in vocational rehabilitation for 4.23 years. He has had 20.1 months of education beyond high school and holds a Master's degree.

The subject that is representative of the population consisting of professional persons in the counseling field without either prior experience with or considerable exposure to deaf persons has had 3.30 years of experience in vocational rehabilitation. He has had 23.70 months of education beyond high school and holds a Master's degree.

[illegible] indicated that there was no difference in the attitudes toward deafness and deaf persons among the four groups of counselors and the attitude scores are comparable to the results reported in other similar studies.

There is no relationship between the amount of exposure that the hearing RCDs had and their attitudes toward deafness and deaf persons. Similar findings were made for the hearing-impaired RCDs. The length of job experience that the hearing RCDs and hearing-impaired RCDs had did not [illegible] their attitudes toward deafness [illegible].

[illegible] data [illegible]

area and has come up with similar findings. He has, however, continued his studies and possibly has uncovered significant developments in the measurement of attitudes toward deafness.

It was also recommended that replication of this study be conducted utilizing a different instrument that has been developed specifically for the purpose of the study and validated against a similar matched sample. A follow-up to this study wherein the study instruments would be administered to all entering trainees at rehabilitation training center at the beginning of the program, just be[illegible] the completion of the program and again one year after completion to measure any possible changes in attitudes was also suggested.

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A STUDY OF THE VOCATIONAL MATURITY OF GALLAUDET PREPARATORY STUDENTS

A. Therese Botz, Student Life Office

(presented at the conference by R. Trybus in Ms. Botz's absence)

A problem faced by every individual in the adolescent and young adult years is that of developing vocational maturity--that set of knowledges, attitudes, and choices which constitute the movement into adult forms of career and vocational activities. The experience of anyone who has worked with deaf young people during this transition is that, as with many developmental tasks, it is even more difficult and complex than for those with unimpaired hearing. Ms. Botz's study was an attempt to describe the level of vocational maturity of Gallaudet preparatory students, and to examine the relationships among maturity level and a variety of personal characteristics. This study constituted her master's thesis at the George Washington University.

The Vocational Development Inventory produced by John O. Crites was the instrument used in the study. The inventory consists of 50 to 100 items (depending on the form used) to which the respondent is asked to indicate "True" or "False" as the item applies to himself/herself. An immediate [illegible] in the use of any written test or inventory with [illegible] the reading level required. The VDI [illegible] reading level; [illegible] reported [illegible] Reynolds indicated that Gallaudet

prep students generally read in the 7th-8th grade range, this should not have been a significant problem. In fact, only one item with idiomatic phrasing produced any quantity of requests for explanation from the participating students, suggesting that the reading level was otherwise well handled. The results were, perhaps, predictable, but nonetheless unsettling: the mean score of the prep students was well below the first percentile compared to normative groups in their first year of post-secondary schooling. The score distribution of the Gallaudet students most closely approximated that of seventh-grade students in Ohio, the lowest of four groups evaluated at the seventh-grade level. This means that the knowledges and attitudes of Gallaudet students with respect to work, career, and vocation were like those of seventh-grade children--not at all like those of their agemates who are also beginning college. Certainly this is a major cultural-social problem, and an area in which Gallaudet College, and educators of the deaf generally as well as deaf adults themselves, must devote an enormous amount of effort if deaf young people are to be able to exercise full citizenship and full development of their human potential.

The other results of the study were: no differences [illegible] between students whose schooling had been in residential schools and those from day schools; the community from which one referred by the student was unrelated to the level of vocational maturity; but students who considered

themselves "deaf" performed better than those who considered themselves "hard of hearing." Some other, less central findings of this study were that students from residential schools were more likely to prefer a manual communication method (91%) than were those from day schools (41%); no significant differences were found between residential school and day school students on socioeconomic status, using the Hollingshead two-factor index; and the presence of deafness in the student's parents or other family members was not found to be significantly related to the likelihood of attending a residential versus a day school program for the deaf.

This summarizes this interesting piece of work, which serves to confirm once again a fact well known to those of us who work with deaf young adults in education or in vocational counseling or vocational rehabilitation: that attitudinal and social immaturity factors constitute the major obstacles for many deaf young adults in the process of transition to full participating membership in our society.

A STUDY OF LANGUAGE CONFORMITY AS A MOTIVE BASE OF THE STUDENTS IN THEIR SOCIAL ACTIVITIES[1/]

Ronald E. Sutcliffe, Manager, Auxiliary Services

A. Introduction

Involvement in student social activities is an important aspect in higher education institutions as it tends to broaden the students' insight of self and others outside of the classroom and also develops good leadership. However, a sense of ali[illegible]ation and apathy appears to be growing in most colleges and universities due to the growth of heterogeneity of the student body (Chickering, 1974, pp. 1-20). This sense is also true at Gallaudet College in spite of the attempts to involve more students in the student government through personal canvas ing, or through the news media.

Formerly, colleges were largely attended by students from the same socioeconomic class and by "college-aged" students. Today, the socioeconomic level and ages are more varied, ranging from the lowest to the highest socioeconomic level and from teen to adult students (Carn gie Commission, 19[illegible], pp. 12-14). An example of alienation is that of black students forming sub-groups together, away from white students, in a form of voluntary segregation. [illegible] different socioeconomic level

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[1/] Based on a [illegible] paper, "A Study of Language [illegible] [illegible] Cohesiveness," submitted [illegible] the Faculty of Graduate School of the University of Maryland in partial fulfillment of the requirements for the degree of Master of Arts.

and language group than those that were seen in colleges a number of year ago. Similarly, many of the deaf students at community colleges tend to form cliques, because of language differences.

At Gallaudet College, the heterogeneity of the student body shows a marked change. Twenty years ago ninety percent of the students were graduates of residential schools compared to the sixty-seven percent today. The remaining thirty odd percent come from other programs. The students from residential schools are usually those who understand Ameslan most of the others are versed in the oral method.

An in-depth analysis of this heterogeneity showed, for example, that the officers and leaders of the Student Government at Gallaudet College came from the same peer group and spoke the same language which apparently resulted in greater cohesiveness of the group. The conformity of language is usually rooted from the individual's subculture, not only from the family but also from other sources, such as the school which students attended during their adolescent days.

The deaf students at Gallaudet, as well as the majority of Americans, write and read English. Technically, however, the deaf students use a different language, sign language. Internally, there are a variety of gestures or sign patterns among the students. These differences are particularly noticeable where students gather in large numbers, such as in the dining room. The signs or visible [illegible] of the style of gestures can be compared

among the areas where the respective peer groups are situated.

Members of the groups intermingle not only because of similarity of interests and beliefs, but because they speak a similar language. That is also true with the black students who form a clique and enjoy their own language, "Black English" (Walton and Clay, 1972). The deaf student, like the black student, is motivated toward the environment so that he can enjoy interacting with persons speaking the same language, "because he can express himself clearly without any problems in his own language" (Brislin, 1973, p. 177).

These tendencies led to a study of the organizational behavior of members of the Student Body Government at Gallaudet College by determining whether or not the conformity of the language background of the members contribute to their tendency to form cliques. The justification for the research was developed around the observation of clique groups of differing language formed in the dining hall, and around the question of seeming apathy among the students.

B. Method

A study was set with an objective to state that the more cohesive the groups, the higher language conformity among the members of an organization or among groups in favorite meeting area. The Subjects for this study were 32 undergraduates at Gallaudet College selected from two groups: 16 leaders of the Student Body Government, most of them

appointive, and 22 elected members of the Student Assembly. These groups in the fall of 1971 completed the Language Conformity Scale developed by the researcher; a modified version of the Group Cohesiveness Scale developed by Schutz (1966, p. 138); and the Biographic Form developed by the researcher. The two groups were chosen to compare appointive versus elective members and small peer group versus wide representation.

The Subjects were asked, after viewing a video-tape, to rank order the following six language styles from 1, the most comfortable, to 6, the least comfortable in their social interaction in continuum from visual to verbal:

1. Ameslan I: Hand gestures that visualize the motion of subject or object, usually developed by the expressing person, understood by the receiver. This does not require much finger-spelling or to spell out words that have no signs. Many of the signs cannot be translated verbatim into written or spoken words. This requires interpretation from concept to spoken or written English language.

2. Ameslan II: Hand gestures that can be interpreted into written or spoken words. However, the sentence at most times cannot be directly interpreted into formal written or spoken English language.

3. [illegible] I: Using Ameslan style of hand gestures in [illegible] to be interpreted into written or spoken [illegible] [illegible] and verb tenses. Generally, this [illegible]

"an attempt to blend English and Ameslan together" (Fant, 1972, p. iii).

4. Siglish II: Same as Siglish I. But the user synchronizes the sign language with vocalization while speaking. This frequently requires flashing out the fingerspelled words which are not always clearly visible to the receiver.

5. Manual English I: Signing in precise English command, including all necessary tenses, that can be interpreted directly into written or spoken English language.

6. Manual English II: Same as Manual English I with same principle as the Siglish II.

A Kendall Coefficient of Concordance through Chi-Square statistics was used to test the significance of concurrence among the subjects, as obtained from the Language Conformity Scale scores. From those observed ranks by the groups, a Spearman Rank Correlation Coefficient was used to test the significance in language styles chosen by the groups.

The Group Cohesiveness Scale included seven scales on the subject's attitudes, and feelings of inclusion in the organization. A Student t-test was used to compare the significance of cohesiveness between the groups.

The Biographic Form included independent variables, for statistical comparison without significance testing between the groups [illegible] differences of five percentage [illegible] on whether or not the [illegible] [illegible] included [illegible] degree

deafness in family, type of school attended, and the age of commencing the use of sign language, and their favorite eating place in the dining hall.

C. Results

Among the five areas in the dining room the appointive members of the SBG are cliqued at the right end of the dining room, Areas 1 and 5 (See Table I). The elective members of the Student Assembly are scattered all over the room, except for Area 2, the left side of the room.

Table I shows the results of the Language Conformity Scale including the mean rank, observed rank, coefficient of concordance, and test of significance among the group member. Both organizational members concurred significantly -the Student Body Government (SBG) Subjects prefer Ameslan [illegible] first choice and Siglish I and Siglish II, respectively. Of the favorite eating areas, the three existing Area I show high coefficient of concordance. Area [illegible] significant, perhaps because it is located in a small [illegible] room of the Main Dining Hall. This room has no [illegible] tables, although it is in the main [illegible]

[illegible]

In comparing the concurrence between the groups through the Spearman test, Table II shows significant differences between the groups with the exception of those between Area 1 and Area 4.

The base of Table I shows the mean score with range score of minimum of 7 should the subject be very negative toward the organization to maximum score of 35, and the standard deviations. The Student's t-test of significance is shown at right side of Table II. It is noted that those high in language conformity indicate high cohesiveness, while those low in conformity showed low cohesiveness. Those who were high in the Group Cohesiveness Scale reflect a strong deaf cultural influence in those of prelingual deafness, early age of sign usage, deafness in the family, and residential schooling (Table III).

D. Discussion

[illegible] carefully analyzing the results and conclusions [illegible], a descriptive picture of the student's in- [illegible] student organizations was brought into focus. [illegible] areas where the student leaders, in general, differ in the [illegible] of culture, language, and per- [illegible] the [illegible] SBG, it was noted [illegible] while elective [illegible] the room, except for Area [illegible] the [illegible] did not specify the [illegible] the leaders who [illegible]

of the dining hall tended to include those with heavily deaf cultural traits.

Especially of those choosing Area 5, there are no significant differences between persons involved in the two organizations, from the same peer group, even though they might be very much interested in the growth of the student government. The basic differences between the groups in the dining areas may be their different background and orientation toward social acceptance through a variety of language styles. As Kluckhorn (1962), in reference to students' motivation in the group suggests, "Motivation and value are both influenced by the unique life history of the individual and by culture." (p. 405). This was evident through a personal conversation with two students who eventually became leaders. Both learned the sign language after they came to Gallaudet on the advice of their guidance counselors. One became deaf at age of 3 and the other at 11. Neither saw another deaf person until they reached high school age. Both indicated that they were accepted by their family in spite of their deafness. They were not aware of social deprivation until after they came to the college for the deaf and began living socially enriched lives with other deaf students. At the beginning of their lives at Gallaudet, they were afraid of hand gestures and are at Area 2, but eventually they felt the need to be "one of them." Now, they use the hand gestures in American so well that any deaf person would not believe they learned sign language only

recently. They now eat at Area 5 and are student leaders. Their motivation appears to be influenced also by their life history.

Because of the language patterns and their appreciation of being in the deaf culture, implications of this study appear [illegible]irable for those working with the deaf to appreciate the value of the students' language, especially of the Ameslan style of communication, and to promote its use so that various students can more readily interact with their peers and teachers. [illegible] was also noted that students frequently change the variant of language to fit a given situation--social as opposed to formal. This need is evidenced by the annual student yearbooks being dedicated chiefly to those who are deaf, from deaf families, or who grew up with deaf [illegible]le. And the organization sponsors or advisors are usually picked for their ability to interact well with the students.

Communication is the persons' ability to [illegible] his language for expressing ideas, needs, and feelings. This is an important concept for those working with the deaf to con[illegible] communications from students, especially from those strong in deaf cultural traits and active in the student government, so that the process of interaction can [illegible].

[illegible] for Further Research

[illegible] time and [illegible] permit, a study should

TABLE I. -- MEAN AND DATAS [illegible]TAINED FROM THE LANGUAGE CONFORMITY SCALE AND THE GROUP COHESIVENESS SCALE BY GROUP

	BY ORGANIZATION				BY FAVORITE EATING AREA							
	[illegible]		STUDENT ASSEMBLY n=21		AREA 1 n=6		AREA 3 n=4		AREA 4 n=6		AREA 5 n=14	
LANGUAGE CONFORMITY SCALE	MEAN RANK	RANK	MEAN RANK	OBSERVED RANK	MEAN RANK	OBSERVED RANK	MEAN RANK	OBSERVED RANK	MEAN RANK	OBSERVED RANK	MEAN RANK	OBSERVED RANK
Ameslan I	[illegible]	4	3.3	4	3.8	4	1.8	1	3.5	4	3.3	4
Ameslan II	[illegible]	[illegible]	[illegible]	3	3.3	3	2.8	3	3.0	3	1.8	1
English I	[illegible]	[illegible]	[illegible]	1	2.7	2	2.8	3	2.0	2	1.9	2
English II	[illegible]	[illegible]	2.0	2	1.3	1	2.8	3	1.8	1	3.0	3
Manual English I	[illegible]	[illegible]	5.[illegible]	5	4.8	[illegible]	5.2	5	4.8	5	5.1	5
Manual English II	[illegible]	[illegible]	5.[illegible]	6	4.5	5	5.5	6	5.6	6	5.8	6
Data												
W	.774		.529		.765		[illegible]		714		765	
p	.001		.001		[illegible]		.02		.001		.001	
GROUP COHESIVENESS SCALE												
Mean	[illegible]		[illegible]		23.[illegible]		[illegible]		24.93		25.79	
Standard Dev.	[illegible]		3.3		[illegible]		[illegible]		1.9		3.4	

[illegible] ... [illegible] IN RELATIONSHIP [illegible]
GR[illegible]

[illegible]	Language Conformity Scale r_{rho}	Group Cohesiveness Scale t-value	F-value
[illegible]			
[illegible]	.8[illegible]	3.[illegible]	[illegible].5[illegible]
[illegible]			
A[illegible]	.516	1.41[illegible]	1.[illegible]
[illegible]	.9[illegible]	3.[illegible]	[illegible]
[illegible]	.7[illegible]	3.[illegible]	[illegible]
A[illegible]	.577	1.6[illegible]	[illegible]
A[illegible]	.577	1.8[illegible]	[illegible].75
A[illegible]	.771	0.63	3.15

* [illegible]
** p [illegible] .1[illegible]

TABLE III. -- ITEMS ON THE [illegible] FORM WHERE DIFFERENCES OF 5 OR MORE PERCENTAGE POINTS SEPARATED THE LEADING.

	By Orientation		By Favorite Hearing Area			
	S. P. G.	S. A.	Area 1	Area 3	Area 4	Area 5
	n=17	n=21	n=[illegible]	n=[illegible]	n=6	n=14
1. Mean Age	[illegible]	[illegible]	[illegible]	[illegible]	[illegible].7	20.6
2. [illegible] Years of Signs	[illegible].7	14.1	8.0	[illegible].5	13.6	[illegible].7
	Percentage			Percentage		
3. [illegible] Deafness						
[illegible]	[illegible]*	55	17	[illegible]*	67*	86*
[illegible]	10	16*	33*	9	16*	7
Total Bilingual	69*	73	50*	46	83*	93*
[illegible]	16	27*	50*	64*	17*	7
4. Age of Sign Use						
[illegible]	40*	27	[illegible]	[illegible]	33*	50*
4-6	35*	13	17	[illegible]*	33*	36*
7-11	[illegible]	27*	33*	27*	17*	0
12-17	[illegible]	7	17*	9	0	7
18+	[illegible]	7	[illegible]	[illegible]*	17*	7
5. Deaf Parents	[illegible]*	[illegible]	[illegible]	[illegible]	33*	50*
6. [illegible] of Siblings	[illegible]*	27	[illegible]	[illegible]	[illegible]	64*
7. School: (Junior Year)						
Public School	[illegible]	13*	33*	[illegible]*	0	14*
Program for the Deaf:						
[illegible]	10*	0	[illegible]	[illegible]	17*	0
[illegible]	0	13*	17*	[illegible]	17*	0
[illegible]	[illegible]*	[illegible]	[illegible]	[illegible]*	[illegible]*	71*

* 5% [illegible] between [illegible] groups

surprising since the respondents are handicapped themselves and probably are aware of sporadic attempts to limit their freedom in marriage. In addition, the deaf respondents are keenly aware of the desire of all handicapped people to receive equal treatment under the law.

In responding to the question of whether or not a deaf-blind person should marry a blind person or a deaf person, the respondents strongly feel that a deaf-blind person should give more consideration to marrying a deaf person that a blind person. However, when given the opportunity to respond to a question that the deaf-blind should marry a deaf person rather than a blind person, the deaf respondents were evenly split in their opinion. The evenly split response to the question is indicative of the establishment of a barrier in areas of concern close to home, which will be discussed further below.

The deaf respondents do not feel that they would lose friends or find it difficult to establish friendships if they married a deaf-blind person. Clearly there are no concerns about such a "mixed" marriage hampering the social [illegible] of the married couple.

A negative attitude is expressed by the deaf respondents in the case of their son or daughter marrying a deaf-blind [illegible]. The deaf respondents clearly do not want their son or daughter to marry a deaf-blind person. In contrast, ninety-one percent of the respondents approved of the idea of

their son or daughter marrying a deaf person. The response of the respondents in this area of concern is clearly indicative of the walls that is built up when matters that hit so close to home are being considered. A distinct line drawn by the respondents when it comes to a family marriage involving a deaf-blind individual.

[illegible] display of a negative attitude towards [illegible] appears when the respondents were asked to [illegible] or not they would be willing to marry a deaf-[illegible] Seventy-seven percent of the respondents [illegible] never fall in love with a deaf-blind [illegible] they did fall in love with a deaf-blind [illegible] percent of the deaf respondents stated [illegible] marry that person. For this group of [illegible] respondents, there is an and the line drawn when [illegible] and intimate relationship [illegible] with a deaf-blind person in the [illegible]

[illegible] love and marriage, the deaf respondents [illegible] of the legal rights of the deaf-[illegible] However, the [illegible] fall in love with a [illegible] person [illegible] with that person, and would not [illegible] marrying a deaf-blind [illegible]

that the deaf-blind are a source of many problems for their families. This belief is somewhat surprising in light of the over-all support given the deaf-blind throughout the survey and the fact that the respondents are handicapped themselves. It might be expected that the deaf would not feel that they cause many problems for their families, and therefore, that the deaf-blind would not cause many problems for their families. However, such is not the case.

Although the respondents were supportive of the deaf-blind in most family concerns, they were split evenly on the question of deaf-blind couples adopting children. Half of the respondents did not support deaf-blind couples adopting children - a response which is surprising since the deaf themselves have been fighting for the right to adopt children. Apparently a half of the respondents feel that the double handicap of deafness and blindness outweighs the right to have children via adoption. On the other hand, eighty-three precent of the respondents feel that deaf-blind people should have children of their own. In addition, fifty-six percent of the respondents believe that a mother who is deaf-blind would be able to take care of a child without the help of a person who can see. Thus, the deaf individuals surveyed support the right of a deaf-blind couple to have children born to them, but are evenly divided on the right of a deaf-blind couple to adopt children.

child and that they would rather have a deaf-blind child than not have any children at all. Thus the family constellation of the respondents would accept and include deaf-blind children, whether the children were native born or adopted.

Job Potential.

The area of employment and employability of the deaf-blind received the greatest over-all support of the deaf respondents. By overwhelming margins the respondents supported the belief that the deaf-blind are capable of doing most jobs. Sixty-six percent of the respondents stated that deaf-blind people are capable of doing most jobs, and eighty-one percent of the respondents believe that a deaf-blind person can be as successful as any normal person. By way of contrast, ninety-six percent of the respondents believe that a deaf person can be as successful as any normal person. Thus, from the outset it is obvious that the deaf respondents feel that the deaf-blind are as capable as the deaf in performing work and leading successful lives.

When answering items concerning specific job capabilities of the deaf-blind, the following pattern emerges. By margins exceeding seventy percent, the respondents believe that the deaf-blind can do a good job as a teacher, counselor writer and author. Slightly more than one-half of the

sixty-five percent of the respondents do not believe that a qualified deaf-blind person should be allowed to become a student of Gallaudet College. When one considers the limitless potential of the deaf-blind, the deaf individuals involved in this study indicate that they believe the deaf-blind are capable of performing most jobs. Although one can question whether or not the deaf respondents have an accurate assessment of the capabilities of the deaf-blind, the overriding factor is the respondents do believe the deaf-blind are capable. It is quite possible that the respondents are expressing support for the deaf-blind in the area of work since they have experienced much difficulty in obtaining suitable employment and that many "normal" individuals do not consider the deaf to be capable of performing many jobs when the deaf themselves know that they are capable of performing most jobs and have proven their worth through hard work and years of struggling. Thus, a situation emerges when one group of handicapped individuals is supportive of another group of handicapped individuals in the important area of life - one's work.

Further support for the deaf-blind is demonstrated when the respondents, by a seventy-eight percent margin, indicate that they would be willing to take a job under the supervision of a person who is deaf-blind. In addition, an overwhelming majority of the respondents state that they would be willing to have a person who is deaf-blind

the deaf-blind to be capable of performing most jobs, leading successful lives, and supervising the work of other people. Such strong support for the deaf-blind, if adopted by most people, could develop into a selffulfilling prophecy.

Education

When it comes to the education of the deaf-blind, there is no question but that the deaf respondents believe that the deaf-blind are capable of being educated. Eighty-eight percent of the respondents state that deaf-blind individuals are just as intelligent as normal people, thus indirectly supporting the educability of the deaf-blind. Such a high level of support is not unexpected when one understands the tremendous struggle that deaf people have faced in educating hearing individuals that they are as intelligent as hearing people and are capable of being educated.

There is a sharp division among the respondents concerning the placement of school programs for the deaf-blind. There is an even split as to whether school programs for the deaf-blind should be in schools for the deaf or in schools for the blind. This division of thinking is consonant with the thinking of educators of the deaf-blind. Some support school programs for the deaf-blind in schools for the blind, while others support them in schools for the deaf. This split concerning this matter

are made as to where the deaf-blind should be educated.

By large majorities the respondents indicate their belief that there would be no bad effects if deaf-blind children were placed in school programs for normal children or in school programs for the deaf. Thus, the respondents do not see any problems developing irregardless of where the deaf-blind are placed. The respondents definitely would not exclude the deaf-blind from schools for normal children or schools for the deaf.

Sixty-six percent of the respondents believe that deaf-blind people are capable of attending college. Because this opinion and the others mentioned above seem unrealistic, it is possible that the respondents do not have a realistic understanding of the capability of a deaf-blind child to make it in an integrated program with the hearing or the deaf and/or in a college program. When one considers the great numbers of deaf children and blind children that are not capable of making it through college or in an integrated program, one wonders about the capability of a more severely handicapped segment of our society making it in those schools. In addition, if one considers the type of school program needed by the deaf-blind and the special equipment, materials and attention that these multi-handicapped individuals need, it is possible to see the great problems that must be overcome.

spondents have for the deaf-blind. The results are not unexpected if one considers the tremendous struggle that the hearing impaired have faced in obtaining equal consideration; therefore, the support shown by the deaf respondents is to support the struggle of another group of handicapped individuals.

Communication

Communication is a multi-faceted area of concern which includes more than the act of speaking to another. It includes, among many things, the ability to understand. Communication in this sense is a most difficult process, but for the deaf respondents it is of little concern when it comes to their ability to speak to and be understood by the deaf-blind - and vice versa.

The respondents overwhelmingly support the idea that the deaf-blind can understand and know hearing and deaf individuals even without being able to see or hear those individuals. Although a much smaller majority of the respondents believe that "normal" individuals can understand the deaf-blind and vice versa, the feeling that the deaf-blind can communicate with people is supported. However, the deaf respondents believe that they are better able to understand and communicate with the deaf-blind than other people.

the deaf-blind communicate using some form of sign language. They also indicate their belief that they are better able to communicate with and understand the deaf-blind, probably because of the fact that both the deaf-blind and the deaf use some form of manual communication to converse with others.

In addition to the belief that deaf-blind individuals should learn to use manual communication, a large majority of the respondents believe that the deaf-blind should learn braille. Thus, the respondents are showing their support for using any and all means available to communicate with the deaf-blind. It appears that this concern for "total communication" is better understood by the deaf as it pertains to the deaf-blind than the need for Total Communication is understood by "normal" individuals as it pertains to the deaf.

Independent Living

It is evident from this survey that a majority of the respondents believe that independent living on the part of a deaf-blind individual is most difficult. Although more than seventy percent of the respondents believe that deaf-blind people are as capable as deaf people in leading successful lives, and fifty percent of the respondents believe that a deaf-blind person is able to do about as well as anyone in most areas of life, seventy percent of the respondents believe that the deaf-blind need help with many daily activities. In addition, more than one-half of the

others as much as deaf-blind people do.

By substantial majorities, the respondents believe that the deaf-blind are able to eat without being messy and are unusually neat in appearance. Although such responses are open to question, it is obvious that the deaf respondents have the belief that in eating and grooming the deaf-blind are able to take care of themselves.

In making an over-all analysis of independent living, it is clear that the respondents do not see the deaf-blind as being able to function independently, thus placing them in a dependency category.

Friendships and Socialization

When it comes to friendships, the deaf respondents indicate strong acceptance of the deaf-blind and a desire to establish friendly relationships with them. Two-thirds of the respondents would go out of their way to be friendly to a deaf-blind person. A majority believe that most parents would approve of their child having a deaf-blind child as a close friend. Eighty-five percent of the respondents would find it desirable to have a deaf-blind person as a close friend, and eighty-six percent would like to have contact with a deaf-blind person. However, on the negative side, a small majority believe that if they were deaf-blind they would not have as many friends as they do at the present time. It is of interest to note that, although the respondents indicate a desire to establish close friendship

it comes to falling in love with or marrying a deaf-blind person. Although on its face, such a situation seems contradictory, it is not when one examines the question more carefully. Most people have friends to varying degrees, and have close friends that they like as friends but would not want to marry that individual. Such is the case with the deaf-blind, but they do not desire to marry them.

In responding to those items on the questionnaire that dealt with empathy, the respondents indicate, by a large majority, that they do feel especially warm towards the deaf-blind. In addition to this, the respondents believe that, as deaf individuals, they are more sympathetic to deaf-blind people than are most people. Such responses are expected, and this writer believes that the respondents probably do have more understanding and empathy for the deaf-blind than do others - based on the special understanding that one handicap group probably has for another handicapped group.

It is interesting to note that the deaf respondents believe that the deaf-blind should socialize more with deaf people than with blind people. The majorities supporting this belief are substantial and pleasing since there is great need to include the deaf-blind in social activities. It is possible that the respondents were considering means of communication when they responded to the items concerning this matter since the deaf-blind who use

communicate with the deaf than with the blind.

The respondents also indicated that they would not be bothered if they were seen with or continuously touched by a deaf-blind individual. By large majorities, the deaf responderts state that they would not be uncomfortable introducing a deaf-blind friend to other friends, nor would they be embarrassed being seen with a deaf-blind person. However, almost sixty percent of the respondents believe that their friends would be uneasy meeting a deaf-blind acquaintance. The acceptance of the deaf-blind by the deaf respondents is clearly evident when it involves their relationships with and to third parties.

In addition to the above mentioned aspects of friendships and socialization, the respondents indicated the following:

* The deaf-blind are <u>not</u> best off staying among other deaf-blind individuals. Deaf-blind people should mix with other individuals besides the deaf-blind.
* Deaf-blind people should <u>not</u> be kept apart from normal community. Segregation is to be condemned.
* The deaf respondents would <u>not</u> date a deaf-blind person as quickly as anyone else. This response is consistent with previous responses on love and marriage.
* Being around and having contact with deaf-blind

worry and concern that they might become deaf-blind themselves.

* The deaf respondents would not be afraid of saying the wrong thing to a deaf-blind person. Their comfort level and self-assurance along with their ability to understand and relate to the deaf-blind relax inhibitions that might otherwise be present.

The respondents indicate strong acceptance of the deaf-blind and show their desire to establish friendships and socialize with the deaf-blind by overwhelming margins.

Knowledge about the Deaf-Blind

From the results of the questionnaire and in particular those items that were designed to measure the knowledge of the deaf respondents about the deaf-blind, it is obvious that the respondents either have some misunderstandings about the deaf-blind or they lack a basic understanding of what causes people to become deaf-blind. It is probable that the lack of knowledge that the deaf respondents show concerning the deaf-blind would be duplicated by other individuals if they were similarly tested about the deaf-blind.

A majority of the respondents indicated correctly that most people who are called deaf-blind have either some vision or hearing or both. This accurate reflection of their knowledge would be expected since, as hearing impaired individuals, they know that many people experience various

residual hearing. This knowledge of the hearing impaired was easily transferred to the deaf-blind. However, when the respondents were asked specific questions regarding causes of deaf-blindness, their responses did indicate misunderstandings or a complete lack of knowledge. There is little knowledge about Usher's Syndrome by the respondents. Of all of the items presented on the questionnaire, those items that pertain to knowledge about the deaf-blind produced the highest percentages of no response, which simply indicate that the respondents did not know much factual information about the deaf-blind.

Certainly, the responses to the items pertaining to knowledge about the deaf-blind indicate that at some point in the education of the deaf, hearing impaired individuals need to learn about the deaf-blind and other important areas of concern such as the genetics of deafness.

Self Concept and Personal Feelings of the Deaf-Blind

Eight items on the questionnaire were designed to determine what the deaf thought the self concept and personal feelings of the deaf-blind would be. The responses of the deaf respondents were interesting in light of the positive picture that they reveal.

The deaf-blind are not perceived to be bitter people. Three-fourths of the respondents felt that they were not bitter irregardless of the situation they were in or the frustrations they might face. Seventy-six percent of the

ents indicate that they do not believe that the deaf-blind use their handicap to take advantage of others. Thus, to the deaf individuals surveyed, a positive image of the deaf-blind is brought out. One can speculate that the deaf respondents were expressing the feelings they have about themselves when they answered the questions pertaining to these feelings of the deaf-blind.

Fifty-four percent of the respondents indicate that the self concept of the deaf-blind individual is probably not too good. The respondents state that deaf-blind children think they are not as good as normal children. One could speculate that such a feeling is probably representative of the feeling of most groups of handicapped individuals. Perhaps the deaf respondents were indicating feelings that they had experienced themselves. Society holds out the "perfect" or "normal" child to be the ideal and it is no wonder that this expression of society is picked up by those who have a handicap as a self fulfilling propheey.

If they were deaf-blind, eighty percent of the respondents state that they would not hide from or avoid people. By projection, one can determine that the deaf respondents feel that the deaf-blind would not hide from or seek to avoid people. This is a positive aspect of the self-image

other people. This belief is consistent with the belief that many deaf individuals have that deaf people understand other deaf people better than hearing people understand deaf people. It is quite possible that the respondents transferred their personal feelings to the deaf-blind in responding to this item. The respondents view themselves as being more understanding and sympathetic than most people towards deaf-blind people, thus adding to the mounting evidence that one group of handicapped people feel that they can better understand another group of handicapped individuals than "normal" people.

The results of the survey clearly show that the deaf respondents perceive the deaf-blind to be free of acrimony and free from using their handicap to their advantage. On the other hand, the respondents indicate that the self concept of the deaf-blind child is probably not a good one.

Personal Reaction to the Deaf-Blind

The over-all reaction of the deaf respondents to the deaf-blind is a positive one. The respondents indicate a great amount of empathy for the deaf-blind. Sixty-one percent indicate that their first reaction to a deaf-blind person is one of pity. However, fifty-four percent of the respondents do not feel that they must be nice to a

than dead, and fifty-six percent of the respondents think they could make a pretty good adjustment if they became deaf-blind. Thus, one can determine that the personal reactions of the deaf towards the deaf-blind is positive, and that the deaf respondents do not feel that the handicap of deaf-blindness is an insurmountable one.

IMPORTANCE OF THE RESULTS AND RECOMMENDATIONS

The importance of the results of this study in the field of the deaf and the deaf-blind is as follows:

(1) This study is the first of its type known to this investigator concerning the attitude of the deaf towards the deaf-blind. As such, it provides those who are concerned with the welfare of the deaf-blind with important feedback concerning the attitude of a group of individuals who can have a big impact on the future well being of the deaf-blind.

(2) This study indicates that efforts must be made to educate the deaf--and other individuals--about the deaf-blind. An educated public can assist greatly in the process of bringing the deaf-blind into the mainstream of society.

deaf individuals towards the deaf-blind. The field of the deaf-blind has lacked objective research concerning the attitude of others towards the deaf-blind, and this project is a beginning in that direction.

(4) The results of this study should serve as an impetus and a reference point for others wishing to investigate objectively the attitude of the deaf towards the deaf-blind, and hopefully the attitude towards the deaf-blind. This project is only a beginning in an attempt to find answers to meaningfully integrate the deaf-blind into the "subcultures" of our society and to society as a whole.

It is recommended that this project be replicated with:

(1) hearing impaired individuals in other types of post-secondary programs;

(2) hearing impaired individuals in the adult community;

(3) visually handicapped individuals; and

(4) "normal" individuals.

During the Summer of 1973, while doing research on the early history of the education of the deaf, I visited the Centro Municipal Fonoaudiologico of Barcelona, which is the most important school for the deaf in North Eastern Spain.

During this visit, Mr. Francisco Tortosa, Director of this Center, manifested great interest in the Cued Speech method of communication. A few months later he wrote a letter to Gallaudet College requesting my services in order to explain this method to some members of his faculty. He was particularly interested in my services because I am a native of Barcelona and as such, I speak fluently both the Catalan and Spanish languages. Since the children of Barcelona are subject to this bilingualism it became evident from the very beginning that it would be necessary to create a Catalan version of Cued Speech, similar to the Spanish version already in existence.

Once the College granted me sabbatical leave in order to work on this project, my immediate concern was to study the sounds of the Catalan language in order to determine the number of 'cues' that the Catalan version of Cued Speech would require. During this period I worked in close collaboration with Dr. R. Orin Cornett, inventor

research enabled me to prepare a set of twelve lessons, which were taped in cassettes.

Once in Spain, I met daily during the month of February of 1975 with two teachers of the Centro Municipal Fono-audiológico, whom I trained in the theory and practice of Cued Speech in both Spanish and Catalan versions. Many of these sessions were attended by the Director, Mr. Tortosa. I translated and handed to them in cassette form most of the literature given to me by Dr. Cornett.

Mr. Tortosa invited me to address the faculty of this institute. Such was, however, their interest in Gallaudet College during the question and answer period that followed my address on Cued Speech, that I realized that while the reason of my trip to Spain was to disseminate information on Cued Speech (which falls within Spain's strong oral tradition), this trip could also become an excellent opportunity to talk about Gallaudet College, its departments and programs, and above all, the method of Total Communication which was not known to them.

I realized also that many teachers would usually take for granted that all faculty members at Gallaudet College would have received formal training in the education of the deaf. Because of this I found it necessary to start all my subsequent lectures with the announcement that I

Gallaudet should be encouraged to take a few formal courses related to deafness such as Audiology, Education of the Deaf and Psychology of Deafness. This training would not only increase our effectiveness as faculty members, but would also give us the opportunity to relate our fields of concentration with many aspects of deafness.

It was not easy to be invited to address other institutions for the deaf in Spain. I list several factors that I believe contributed to the invitations that I received. These are not listed in order of importance. 1) A genuine interest in Cued Speech together with the realization that it falls within Spain's oral tradition. 2) The fact that while I was a member of the Gallaudet Faculty and an American citizen, I am also a Spaniard and a Catalan, fluent in both languages. This circumstance facilitated frank exchanges of opinion and mutual understanding in the social hours that followed my addresses. 3) My previous contacts with Mr. Fortosa and Dr. Perelló who visited Gallaudet College in the summer of 1971. 4) My determination not to accept any honorariums or expense fees for my lectures. 5) My willingness to listen to criticism of our methods, without trying to change their methods. Spaniards are very sensitive to criticism, but at the same time very prone to self criticism.

was on Cued Speech, the second on Total Communication at Gallaudet College.

At the University of Barcelona (Teachers College) I addressed the teachers who are taking Postgraduate courses on Special Education (Técnicas de Audición y Lenguaje). Mr. Tortosa asked me to deliver an address on Stuttering. Although I lack formal training on this topic, I am familiar with it due to the fact that I have stuttered since my early childhood. To this same audience I delivered later on a lecture on Cued Speech. These two lectures allowed me to establish contacts with directors of other institutions of the deaf who were also lecturers at the University of Barcelona.

I addressed the faculty of the Instituto Educativo de Sordomudos y Ciegos, which is the largest school for the deaf in the city of Barcelona. This Center is one of the many Institutes for the Deaf in Spain and Latin America run by the Franciscan Sisters. Sor Sonia Ramos, Director of this Center, is also professor of Speech at the University of Barcelona.

The Catalan Society of Oto-Rhino-Laryngology together with the Department of Audiology of the University of Barcelona (Escuela Profesional de Oto-Rino-Laringología) invited me to deliver a public address at the Academy of

of the International Association of Otorhinolaryngology. At the conclusion of this address (on Gallaudet College) I showed several slides of our Campus, and also of several deaf faculty members (there are no deaf teachers in Spain).

I addressed also the faculty of the Centro Piloto de Reeducación Auditiva, which is an Institution run by the Asociación para la Reeducación Auditiva de los Niños Sordos (ARANS). To this workshop were invited the former Director of the Centro Municipal, other teachers from Madrid and Barcelona, and several parents. The invitation was extended to me by Mr. Antonio Delgado, Technical Director of the Institute.

At the beginning of my lecture at the University of Barcelona three members of the executive committee of the Association of Parents of Students of the Centro Municipal Fonoaudiológico were prevented by Mr. Tortosa, Director of the Center and Coordinator of these courses at the University, from entering the room were I was about to deliver my address. While the reason given by Mr. Tortosa was that these three gentlemen were not faculty members of the University, his real reason (as expressed to me later by Mr. José Morella, President of the Association) was the fear that members of the Association, upon learning about Cued Speech would exert pressure on him in order

their parents would accuse him of experimenting with their children, while the parents of the other children would accuse him of favoritism. The members of the executive committee of the Association of Parents screened me during a two hour meeting at the home of the President of the Association. I agreed to deliver an address to the whole Association provided Mr. Tortosa, the school Director, was present. My interest was to avoid charges that I was trying to influence the Association against the will of the Director of the Center.

In the city of Barcelona the Association of Parents are still controlled by the Directors of the Schools to which they are attached. According to Spanish Law they are not allowed to hold meetings unless it is in their respective schools. Similar organizations in Madrid, in as effort to exert more pressure on educational Institutions for the Deaf, have recently joined in an independent, officially approved organization called ASPAS (Asociación de Padres y Amigos del Sordo). No association is allowed to exist unless with the permission of the State. ASPAS of Barcelona has been waiting for this permission since December of 1974.

The most important Institution for the Deaf in Spain is the Instituto Nacional Pedagogía de Sordos, of Madrid, which is governed by the Ministry of Education and Science.

on Total Communication at Gallaudet College. In a third address I spoke to the general faculty of the Institution, including the medical and technical staffs (audiologists, speech therapists, etc.). For this occasion, Dona Maria had invited directors of other institutions.

In Madrid also, I addressed the faculty of two Institutions that have the same name: "Colegio La Purísima", one for boys, the other for girls. These Institutions have a combined enrollment of some 700 students, and are administered by the Sisters of St. Francis. It is my belief that innovations such as Cued Speech or the introduction of Total Communication in Spain are more likely to take place in these private institutions.

While in Madrid, I visited also the Instituto Profesional de Sordomudos Ponce de León, whose Director, Don Estanislao Martin Pascual was former Director of the Instituto Nacional de Pedagogia de Sordos. This Institute trains deaf young men in the industrial arts.

Don Estanislao invited me to address his faculty on the topic of Cued Speech. I was introduced to him by General Don Jesús Andújar who was able to bring Prince Don Juan Carlos to the inauguration of this School in 1972. This contact proved very fruitful for the Institution. General Andújar is a close relative of mine. It is in-

Finally, in an effort to disseminate more information on Cued Speech, I wrote a paper entitled "La Palabra Sugerida (Cued Speech): A New Method of Early Communication with the Deaf Child," which was read and accepted for publication in the proceedings of the III National Congress of Educators of the Deaf, which took place in the city of Alicante (South Eastern Spain) on March 24-27.

It is too early to evaluate the results of my efforts in Spain. Cued Speech was undoubtedly well received. It was possible to demonstrate that it falls within the oral tradition which is universal and deep seated in Spain. I was able to detect, however, sincere interest in the method of Total Communication once they realized that it was different from the natural sign language used by the deaf people in Spain. The main objection to Cued Speech was the fact that it has not been possible to demonstrate its effectiveness in other parts of the world. Once in possession of the statistical studies (which they requested) concerning its effectiveness, it will be easier to introduce it in Spain and Latin American countries, given the phonetic simplicity of the Spanish language. In any event, Cued Speech proved to be an excellent method of establishing contacts with many institutions for the deaf in Spain.

Director, Office of Cued Speech Programs

I suppose every child is fascinated by a circus. I used to enjoy the animal acts, the death defying performances on the high wire, and even many of the side shows. But one performance that never ceased to delight and fascinate me, no matter how many times I witnessed it, was that of the bareback riders who careened around the ring, riding two horses at once, with one foot planted firmly on each, then jumping from one horse to another, doing somersaults and balancing acts on their madly galloping steeds. It seems to me that the successful deaf person is a lot like those bareback riders who ride two horses at once. He must develop the skills that will enable him to live and perform in two worlds. It involves absorbing enough of the social and cultural orientations of both these worlds to be able to fit reasonably into each of them.

It is certainly not necessary for me to recount for this audience the reasons why the deaf person needs to be able to function in two worlds. It might be relevant, however, for me to tell you a little bit about how I came to understand this necessity in some of its more basic aspects. Like most hearing persons, in my first years of association with the deaf I was slow to understand why deaf persons with

good oral communication skills should not be expected to use those skills consistently among themselves. Marvin Garretson, now Principal, Division of Instruction, Model Secondary School for the Deaf, was the one who destroyed my naiveté on this point. "Orin, if you want to understand the problems of the deaf person in the world of the hearing," he said, "you will have to understand that speechreading is like this!" With those words he stared at me with an intensity of facial expression and body tension that conveyed vividly the idea that the act of speechreading requires tremendous concentration and sustained effort. I began to realize that the deaf person's participation in the hearing world is not simply a matter of having the necessary communication skills, but that it involves also problems of sustained stress and endurance. A person who has worked hard all day (perhaps even in an atmosphere which requires a lot of speechreading) comes home ready to relax, to put on his slippers and light his pipe, enjoy a good meal, and indulge in pleasant chitchat. What he is not ready for is to sustain a conversation with his spouse through stressful speechreading. And if the couple wish to go out for a social evening, they will want to spend it with people with whom they can enjoy a relaxed, casual conversation in a mode which is easy and natural for all concerned. The deaf person must have a "world" in which he can relax and enjoy himself.

I should say that the deaf person has no choice. He really has to live in both worlds. The quality of his life

will depend upon the degree to which his social and cultural orientation, as well as his communication skills, equip him for both worlds. He must be both bi-lingual and bi-cultural.

Obviously, the deaf person needs to know the language of signs. He needs mastery of it in a variety of forms, from Ameslan to something approaching Signed English, if he is to associate effectively with deaf people in different areas and different circumstances. The language of signs is a beautiful language. Those who say it is primitive or limited simply do not know much about it. True, it has a rather limited vocabulary, but that is only because educated deaf persons and the hearing persons who communicate with them have the alternative of fingerspelling words for which there are no signs, instead of inventing new signs. The fact that sign language is ideographic rather than phonemic is not a factor here; witness the fact that written Chinese and written Japanese, which are ideographic, have adequate vocabularies.

For most deaf persons, neither communication nor social and cultural orientation offer any real problems insofar as concerns the world of the deaf. The deaf have a rich social and cultural heritage which is coming to be appreciated more and more. Almost any deaf person who makes a real effort to learn to communicate in and be a part of this heritage can do so. Fitting successfuly into the other world, the world of the hearing, is the big

problem. In the past, one problem has been that so many people have insisted that the deaf person should depend upon the world of the hearing for all of the satisfactions and rewards of life, denying and rejecting the one which is easiest and most natural for him. Once it is agreed that the deaf person should be both bi-lingual and bi-cultural, it is possible to address in a realistic manner the problem of equipping him for his second world. By "second world," I do not mean second temporally. I do not mean to say that the deaf child should first be equipped to communicate with and interact socially with the deaf, and then should be equipped to cope in a hearing world. Which should come first in time (or whether they should develop simultaneously) depends upon his circumstances and, to some degree, his capabilities.

Yes, the deaf person must be bi-cultural and bi-lingual if he is to have a full life. It is in connection with the achievement of bi-lingualism (and as a result, the potential for a dual social and cultural orientation) that Cued Speech has so much potential. For the deaf person the language of signs can be learned simply by associating consistently and intimately with those who use it. The cultural and social heritage of the deaf is available to any deaf person who seeks it with the proper respect and appreciation. But equipping himself for the world of the hearing is an entirely different problem for the deaf person. The language of the hearing cannot be learned simply by being

exposed to it (if one is deaf), and cultural and social assimilation and acceptance are limited without it.

This is the context in which I shall discuss Cued Speech today: as a means of enabling the deaf person to learn the spoken language and achieve a reasonable degree of cultural and social orientation toward the society which uses it. Let me first bring you up-to-date on the status of Cued Speech. For the benefit of any of you who are not familiar with it, I will explain, very simply, that Cued Speech is a system of eight hand shapes used in four positions near the lips to make all of the sound of the spoken language look clearly different from each other either on the lips or on the hands. If all the sounds we use in speaking looked clearly different from each other on the lips, the deaf child could learn the spoken language (in a visible representation) in a completely natural way, by observing the lips as one speaks in meaningful conversation. But the lips identify groups of sounds, not single sounds. In Cued Speech, a mathematical minimum of information is added (by means of the hands) to the information on the lips, so that the 40-plus phonemes of spoken English look different from each other, either on the lips or on the hands. The cues do not identify individual sounds, and cannot be read without simultaneously observing the lips.

At present Cued Speech is available in 22 languages, although it is currently in use in fewer than half of these. According to a survey carried out by the Office of Demo-

graphic Studies, Cued Speech is used to some degree in approximately 237 schools and programs in the United States, with about 7% of the children. Only between 40 and 60 are using Cued Speech fully. The others are oral or total communication programs which use Cued Speech primarily for teaching spoken language, or total communication programs which use Cued Speech with a few children because that is the mode of communcation they are accustomed to using with their parents.

You are aware that the so-called oral method does not result in the learning of the spoken language by the deaf child in a normal way. Not only does it fail to cause the language to be learned simply through the interaction in the home, but it does not result in clear enough communication for normal emotional and intellectual growth of the young deaf child. There is growing evidence that Cued Speech overcomes both of these problems to a reasonable degree. If the hearing parents of a deaf child learn Cued Speech and use it consistently with that child, the spoken language is learned in a visible form through the use of the language in the home, without structured teaching. Further, two-way communication between parent and child can develop at a level which results in essentially normal personal development. Now these are assertions which you may want to take with a grain of salt because I do have a special interest in Cued Speech and might be slightly biased. Fortunately, research results are now becoming available which make it possible to evaluate

these assertions and which, in fact, support them. Dr. Daniel Ling of McGill University was mentioned by one of the earlier speakers. He and Dr. Bryan Clarke, of the University of British Columbia, have completed a longitudinal study of children using Cued Speech which clearly establishes the development of their skill at understanding spoken language with cues, and which shows also that there has been a significant improvement in their ability to understand spoken language without the cues, though the improvement at unaided lipreading is far below that with cues.

The deaf child cannot learn the spoken language naturally by exposure either to signs or to spoken language. In the pure oral method, much time is spent practicing oral communication with the deaf child, but when one is ready to teach him a new word or a new language pattern, one uses the written language. In order to teach a word or pattern, it is necessary to interrupt the process of oral communication and introduce the written form. The same is true if signs are used. There is no way for a deaf child to get from the sign for a given concept to the word for that concept without help from someone else. Therefore, if one is communicating with a child in signs, if he comes upon a concept for which he wishes to teach the word to the child, he must interrupt the process of signing and interpolate the word in written form (or in fingerspelled form)--he must teach the word.

When Cued Speech is the normal mode of communication in the home of a deaf child with hearing parents, the spoken

language is learned (in visible form) without the interpolation of any aid in representation.

You may have heard of the experimentation with use of sign language in schools for the hearing in which classes for the deaf were housed. Roy Holcomb, in Santa Ana, California, led many teachers and hearing children in a junior high school there to learn the language of signs in order to be able to communicate effectively with the deaf children who were in special classes. The result, I am told, was a great increase in social and cultural interaction, an increased feeling of security on the part of the deaf children, and increased motivation. This would be precisely analogous to children in an English-speaking school who learn Spanish in order to be able to communicate better with children from Spanish-speaking homes. Despite the social and cultural benefits, this does not cause the Spanish-speaking children to learn English--in fact, it may militate against their learning English if it succeeds too well, since they will be spending most of their time communicating with the English-speaking children in Spanish, rather than English.

A widely increasing practice in day class programs is the learning of Cued Speech by hearing children in order to facilitate communication between the deaf children and the hearing children, with attendant social and cultural benefits which are precisely the same as those which result when the hearing children learn sign language in order to communicate with the deaf children. The great difference is

that every hearing child who learns Cued Speech and uses it with deaf children becomes an English teacher. Communication with hearing children in Cued Speech, since Cued Speech is a true code for the spoken language, will result in the learning of spoken English by the deaf.

The possible contribution of Cued Speech to cultural and social development of the deaf child is enhanced by the fact that only 12-20 hours, on the average, are required for a hearing person to learn Cued Speech. Though the process of learning it is perhaps not as interesting as learning the number of signs one could accumulate in the same time, the difference is that once one has learned the Cued Speech system his whole English vocabulary is available to him. This makes it practicable for parents, siblings, classmates, and friends of a deaf child to learn Cued Speech and add to the circle of those from whom the deaf child can learn English.

Theoretically, the one open window on the world of the hearing which the deaf person should have is reading. Unfortunately, the vast majority of prelingually deaf persons do not learn to read well, and thus do not make maximum use of what should be their greatest asset. The basic reason for this is that they do not learn the spoken language before learning to read. In order for reading skills to develop optimally, a child should have a good knowledge of the spoken language before he is taught to read, and in his first year of reading he should encounter

no words or patterns (except proper names) that are not already familiar to him and used by him. Perhaps one of the most important advantages of Cued Speech is that through its use in the home, the young deaf child can acquire a foundation in the spoken language which will equip him to learn to read at the normal age in the normal way.

I think I have made it clear that I do not consider Cued Speech as competitive to the language of signs, except as regards first language acquisition by a deaf child with hearing parents. By this I mean that Cued Speech is not offered as a substitute for sign language. Because of the problems a deaf child faces, however, in learning to read and speak, I think the child with hearing parents should learn spoken English (with or without sound) as his first language. Then, after he is reading well and is at home in English, I think he should learn the language of signs from people for whom it is the normal mode of communication, not from hearing parents whose knowledge of it is very limited and who cannot think in it. I think a deaf child with deaf parents should learn the language of signs in the home, from his parents for who it is a true language and not a feeble code for English, as it is used by those of us with limited proficiency. The deaf child with deaf parents should learn spoken English through Cued Speech, from hearing persons (or postlingually deaf persons who know spoken English well). And, the deaf child should have the opportunity and the capability, at least by the

time he reaches adolescence, to function socially and culturally in both worlds, regarding them both as important to him and worthy of equal respect.

I should like to use an actual case history to illustrate how Cued Speech, in the home of deaf children with hearing parents, can furnish social, psychological and cultural benefits analogous to those provided by the use of the language of signs in a family in which the parents are deaf. Mr. and Mrs. Gould, who live in New York City, have identical twin boys who were born deaf. At age four they were enrolled in the New York School for the Deaf, at White Plains, in an oral program. Gregory was doing reasonably well, but Jeffrey was not, even though they have identical audiograms and are apparently equal in all respects. One of the twins had to have a tonsillectomy, and it was a terrible experience for him. He had no idea of what was going to happen, and the parents had no way to explain it to him and reassure him. Soon after (in May) the mother learned Cued Speech and began using it in the home, and its use was begun by the teachers in the school in the Fall. In January the school reported that the two twins, Jeffrey and Gregory, were making excellent progress, and that there was no observable difference between their levels of progress in language and language skills. At about that time the other twin developed tonsillitis and had to have his tonsils removed. The parents were able to prepare him to understand exactly what was going to happen, to describe

the process, and to make him understand that when he woke up his throat would be very sore, but that it would feel better when he ate some ice cream. This twin, I think it was Jeffrey, had no trouble at all and came through the tonsillectomy with complete triumph. Now, I emphasize that there would have been the same success had the parents been using the language of signs. What is necessary for the child's appropriate social, intellectual and cultural development is clear communication with his parents. If his parents are hearing, this can be supplied through Cued Speech and the target can be the earliest possible development of a foundation for reading, speechreading and speech. If the parents are deaf, the normal mode of communication in the home should probably be the language of signs, and there should be a parallel program to develop knowledge of the spoken language through Cued Speech.

As I see it, Cued Speech is a useful tool for development of the capability of the deaf person to be successful and happy in that portion of his activity which he must (or chooses to) spend in a hearing society. It is not a substitute for the language of signs nor does it open up to him the rich social and cultural benefits of fellowship with other deaf persons, which is just as essential to him. So, a deaf person must be bi-lingual and bi-cultural. The deaf person who can keep one foot planted firmly on each "horse" and keep them running together smoothly and steadily can hope to have a full and successful life.

CAPSULATED REPORT ON THE FORMATIVE EVALUATION OF SLIP,*

LESSON 1: ROUND 1

Lawrence M. Rudner, Office of Research and Evaluation,
Model Secondary School for the Deaf

This report summarizes a detailed report concerning the formative evaluation of the first lesson of the Structured Language Improvement Project (SLIP).** The theme of the first lesson of SLIP is the distinction between the simple present (e.g. He plays ball every day.) and the present progressive (e.g. He is playing ball right now.)

Lesson 1 utilizes mystery stories, picture stories, and games such as bingo and checkers in an attempt to maintain student interest and to assist the students in meeting the objectives. A typical activity has the students develop and discuss several sentences using both verb forms and has a stimulus one or more of these interest generators.

The Mediated Interaction Visual Response System (MIVR) is incorporated into Lesson 1 to give the students additional opportunities to see and benefit from each other's work. The MIVR System utilizes individual overheads for each student and for the teacher, in order to constantly expose

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** Rudner, L. Formative Evaluation of the Structured Improvement Project for the Deaf Adolescents, Lesson 1: Round 1. Washington: The Model Secondary School for the Deaf, 1975.

the students to different sentences using the two verb forms and to afford the teacher an additional opportunity to provide reinforcement and feedback. This system was developed specifically for use in schools for the deaf and has received much praise where it has been used.

Purpose of this Evaluation

The key emphasis of the evaluation was to provide the developers with objective information and professional judgements regarding the effectiveness and feasibility of each activity in terms of accomplishing their specified instructional purposes and in terms of capturing student interest.

METHODOLOGICAL DESIGN

Sample

The profile of the five participating students is presented in Table I. All of the students had Stanford Achievement Test (SAT) paragraph meaning scores above 3.4 and hearing losses of greater than 70 db ISO.

TABLE I

Profile of Students Participating in the Pilot Test

Student	DOB	SAT (5/74) Para. Mean.	SAT (5/74) Math Comp.	BEA (ISO)	SEX
A	1/59	3.7	4.3	86	F
B	4/59	3.4	5.2	80	F
C	9/59	4.4	6.1	95+	F
D	9/58	3.6	5.9	73	M
E	2/57	4.8	3.1	70	M

Class Schedule

As part of a language learning program, Lesson 1 was designed for class meetings of one hour a day, five days a week, for three weeks. However, because of the space limitations in the MSSD's temporary facilities, a far less desirable schedule was mandated. Classes were held for ten weeks with class periods of ten to forty-five minutes for a total of 23 sessions. During this ten week period, student vacations and holidays caused two prolonged interruptions in which the class did not meet--one for one week and another for two weeks. Despite this schedule, one considered to be detrimental to any structured language program, the instructional teams decided to continue with the pilot test in order to obtain at least partial informa-

tion regarding the feasibility and effectiveness of the activities.

Description of the Design

The evaluation of Lesson 1 addressed itself to the following questions:

1. Will there be improvement in the students' ability to identify proper and improper usages of the simple present and the present progressive?
2. Will the confidence of the students improve with regard to identifying proper and improper usages of the two verb forms?
3. Will there be improvement in the students' ability to correct improper usages of the two verb forms?
4. Which activities and formats are most and least helpful in terms of capturing student interest and/or in helping the students meet the objectives?
5. Will the semantic crutch (i.e. a graphically presented timeline introduced in Activity 2) be helpful to the students?
6. What will be the reactions of the students and the teacher to the materials?
7. What are the required reading levels of the materials and what effect will this have on the activities?

The evaluation did not attempt to directly measure the attainment of each terminal performance objective, nor to judge the worth of any objective.

Data Gathering Instruments

Observation checklists--Two observation checklists were used to objectively record indications of pupil interest during each class period. The Classroom Creativity Observation Schedule was used to assess and record positive and negative signs every three minutes during each class period. Positive signs included pupil eagerness, attention and intent work. Negative signs included reluctance, restlessness, and rudeness toward the teacher.

Pupil interest was also measured by use of an Attentiveness-To-Task checklist. At the end of each three minute interval, a recording was made as to whether each student was paying attention to the task.

The results of these checklists helped ascertain which activities and formats were most and least successful in terms of capturing student interest and in helping the students meet the objectives.

Pre- and Posttest--A test, consisting of correct and incorrect usages of the simple present and the present progressive, was developed for use in this evaluation and administered on a pre- and posttest basis. These incorrect usages were designed to be typical of the written mistakes made by hearing impaired, high school students.

The Pre- and Posttest scores were compared to determine whether individual students showed significant gains or losses in terms of 1) student ability to identify proper and improper usages of the two verb forms, 2) student

confidence in this task, and 3) student ability to correct improper usages of the two verb forms.

Fry Readability Graph--The Fry Readability Graph was used to provide an estimate of the readability of written passages over 100 words, based on sentence length and word length.

Student written work--Almost every activity in Lesson 1 requires the students to do some writing of sentences using the two verb forms. These writing samples were collected and analyzed to help determine the number and types of mistakes being made by the students, and the response density in terms of the average number of student responses per ten class minutes.

Discussions with the Participating Teacher and the Developers- After each class period, discussions were held with the participating teacher and one of the developers (who was also observing). From these discussions, suggestions, problems, strengths and recommendations were noted.

GENERAL FINDINGS

Pre- and Posttests

Pre- and posttests were given to four of the five students enrolled in Lesson 1. No significant differences were found in any of the students' ability to recognize usage mistakes or in their confidence in recognizing usage mistakes. However, three of the students did show significant

improvement ($p<.05$) in their ability to correct mistakes in the simple present and the present progressive. This implies that the students realized that they were making mistakes, but until this course were not able to produce the proper verb forms.

While the students showed some significant pre-post gains, none were able to correct more than 72% of the improper usages. In light of the scheduling problems, these low percentages were anticipated.

Readability

With the possible exception of the written stories in later activities, the readability of all the stories were all within the students' reading abilities, as indicated by the Fry Readability Graph.

Several words used in Lesson 1 were identified by the instructional team as having caused problems for the students. These problems included the use of idioms, not enough objects for an intransitive verb, unfamiliar words, and words which were misleading for the task. During the revision process, these words will be examined by the developers.

During the first usage of SLIP, few of the activities dealt with comprehension of the written passages. Both developers recommended that a comprehension aspect be added to each story during the revision process.

Additional Observations

Use of a model--The students exhibited obvious con-

fusion and the response density tended to be lower when no model (i.e. an example of the desired type of response presented as a reference for the students while they complete the task) was presented. In a discussion with the developers and the participating teacher, it was determined that the students should always have a clear model available to them.

Charts--Lesson I is concerned with the use of the simple present and the present progressive. However, the participating teacher initially found herself correcting conjugation mistakes made by the students (e.g. I sleeps.). The Instructional Development Team decided that the charts made for the SLIP should definitely be posted in the room during each class period.

Feedback--During several activities the students were not provided with enough feedback in terms of reinforcement of correct responses and/or correction of improper sentences. While this was partially a result of the class schedule, it was determined that each activity should have some form of controlled feedback built in.

MIVR--During the pilot test, each student controlled his own overhead. Occasionally, students would turn on their overhead and enthusiastically show their sentences to the rest of the class. Although this type of behavior can be positive, it often resulted in attracting everyone's attention at the wrong time. The participating teacher commented that if a master control panel were available, the

teacher could spend more time on the activities and less time monitoring this feedback apparatus.

SPECIFIC FINDINGS

An analysis was conducted on each of the individual activities in Lesson 1. This analysis included:

1. A detailed item analysis of the student responses in several activites.

2. The checklist of student interest and attentiveness to task.

3. Information regarding the relationship of each activity and the specified objectives, whether the students were presented with a model, an approximate rating of the amount of feedback, and response density.

Specific recommendations, based on these analyses and conversations with the developers and the participating teacher, were identified and incorporated in a report to the developers (Rudner, 1975).

CONCLUSIONS

Lesson 1 was able to produce significant improvement in the ability of some students to correct improper usages of the simple present and the present progressive. The general readability, content, and formats of Lesson 1 appear to be well suited for the participating students. Although handicapped by scheduling difficulties, the Instructional Development Team was able to identify areas for further refinement for both Lesson 1 and SLIP in general.

The Instructional Development Team recommends that these further refinements be completed and that a revised SLIP be pilot tested.

SOCIAL AND CULTURAL ASPECTS OF THE PRESCHOOL SIGNED ENGLISH MATERIALS

Harry Bornstein, Department of Psychology

As some of you know, we are presently conducting an evaluation of the Signed English system as it is being used in the Kendall Preschool program, the Columbia branch of the Maryland School for the Deaf, and two schools in Prince Georges County. We are also including in the evaluation an out-service or exclusively home-visit program and the Parent Counseling program of the Maryland School for the Deaf. This evaluation consists, essentially, of tracing the language development of the children, determining those factors which are related to that language development, acquiring information on how we might improve our teaching aids, and determining what teaching needs are still unmet. We have just completed our data collection for this year and hope to have our first report available in the fall. We expect to report regularly on these matters for the next several years.

Of course, when you use language to communicate, the messages that are communicated embrace a variety of content which can have a wide variety of social or cultural implications. When preparing our Signed English materials, we have always been acutely concerned with meeting the immediate needs of families in their daily lives, with increasing their pleasure in communicating with each other,

and with readying the child for reading and for his later schooling. It seems to us that we can affect a child's vision of himself and of the world by the types of situations we depict and the roles that different kinds of individuals play in those situations. For these reasons, we have shown blacks, orientals and Spanish children and adults in positive roles in a large variety of settings. Similarly, our When I Grow Up book shows women as doctors, lawyers and policewomen as well as in "more traditional" roles. In that same book, we depict a male librarian for essentially the same reasons.

I have heard sufficient anecdotes to cause me to think that many very young hearing impaired children suffer needlessly because they have no idea as to what is happening to them or what is expected of them. For example, I have seen many children refuse to put on earphones. Their parents relate that the children have had earlier negative experiences with attempts to measure their hearing. Consequently in We're Going to the Doctor we have featured an ear examination in the hope that a child can come to see it as a familiar and not unpleasant experience. In similar ways, we have tried to cover as systematically as possible other frequently occuring and important experiences in the life of a child.

To further this idea, I have grouped some of the titles in the series on the basis of commonality of experience and hoped-for social consequence on the accompanying chart.

The hoped-for social consequence is implied by some behaviors which could be evaluated in a research study. For example, our book Bobby Visits the Dentist portrays the kinds of things that may happen before a visit to the dentist as well as what happens in his office. Apart from the language the child and parent gain from use of this book, we would hope that the child's behavior prior to and during a visit to the dentist would become more appropriate, that the child would be more comfortable and less apprehensive when undergoing the experience, and that he would be more fully aware of the routines he must follow for good dental hygiene, e.g., brushing his teeth.

The basic research paradigm for testing such hoped-for behaviors, or behavioral hypotheses, if you will, is fairly straightforward. First, ascertain from a reasonable number of dentists the kinds of behavior they regard as desirable and undesirable at home and office. Second, assemble comparable experimental and control groups of hearing impaired children. The experimental group would be familiarized with the text of Bobby Visits the Dentist through extensive readings by teacher and/or parent whereas the control group would not be given any exposure to the book. After all of the children in both groups subsequently visit the dentist, their behavior could be evaluated by the dentist and others on the behaviors determined earlier. It should be possible to develop parallel experiments for experiences and situations depicted in other groups of books listed on

the chart.

At this time, we have accumulated enough anecdotal information to suggest to us that these are indeed tenable hypotheses. Perhaps other researchers may find that our materials afford very manageable opportunities for a variety of studies which deal with the social and cultural aspects of the Signed English materials for hearing impaired children.

SOCIAL AND CULTURAL ASPECTS OF THE PRESCHOOL SIGNED ENGLISH MATERIALS

Harry Bornstein

Name of Material	Behaviors Which Could Be Evaluated
The Entire Signed English Series (for improved language and communication)	(a) number and kind of emotional problems (b) nature of school and home adjustment
Stories and Poems (Little Red Riding Hood, The Night Before Christmas, The Tale of Peter Rabbit, etc.)	(a) knowledge of "general" culture (b) knowledge and practice of such broad cultural values as honesty, being "good", etc.
Bobby Visits the Dentist We're Going to the Doctor Julie Goes to School Stores	(a) behavior prior to and during the experience (b) comfort and apprehension (c) awareness of routines
Mealtime at the Zoo I Want To Be A Farmer Sand, Sea, Shells and Sky	(a) pleasure (b) ability to name and show related learning (c) knowledge of safety rules
Happy Birthday, Carol The Holiday Book "Good Manners Book" (to be prepared)	(a) social skills appropriate to setting (b) interpersonal skills
How To in Signed English	(a) mastery of specific skills, e.g., pouring juice, eating an ice cream cone, buttoning a coat, etc.

FINDINGS AND OBSERVATIONS IN THE EFFECTS OF DANCE

Peter R. Wisher, Department of Physical Education

Introduction

During the past few years the dance area as an educational medium has been receiving increasingly greater acceptance by educators. A recent publication (5) by the national physical education association stated that: "In many different ways it is evident the dance area is booming and that there is an explosion of confidence in dance as a contributing factor in the educational process."

This situation may be true of the general public, but a comparable emphasis in the education of the hearing impaired has not been evident--those who could benefit most from this exposure. However, interest in this area seems to be surfacing; during the past year I have had many visitors and numerous inquiries regarding the implementation of dance programs in schools for the deaf and day schools.

Several studies concerning the deaf have indicated a serious educational, social and emotional disparity between the deaf and their hearing peers: (1) one researcher (4) reported that the deaf were retarded from 4 to 7 years behind their hearing counterparts; (2) normal acquisition of language (2,4) is not possible for the deaf; (3) three studies (1,2,3) indicated that the deaf were socially immature, resorted to impulsive behavior, were egocentric; (4) another study (2) reported that the deaf possessed certain defi-

ciences with respect to abstracting and conceptional ability.

Based on my two decades of experience with the deaf, I have the nagging feeling that the validity of many of the findings is suspect. Since most of my contacts with the deaf were with students at the college level, perhaps my impressions would not be true of the general population.

At any rate, since there is a paucity of data concerning dance for the deaf, and since I am not aware of any outstanding on-going programs in this area, it is necessary for me in this presentation to rely on my personal observations and two informal studies regarding the attitudes of the deaf toward dance. I might add that three members of the performing group at Gallaudet will make brief oral statements about the effects of dance; this to be followed by a short program of dances.

Informal Studies

Students Attitude Toward Dance

During the past ten years, because of my curiosity, I have been including a two-part question at the end of each final examination in ballroom dancing: Do you think the deaf should learn to dance? Why?

In their responses to the first part of the question, 99.9% indicated that the deaf should take dancing. As for the second part of the question the students, in order of frequency, responded as follows:

1. Learn about rhythm.
2. Fun, satisfaction
3. Social values.
4. Educational.
5. Influence hearing people
6. Develop confidence.
7. Coordination.
8. To counter frustrati-
9. Beauty in dance.

On a recent plane trip to Florida, I submitted the following question to eight members of the performing group for their collective opinions: Why (I) we dancers are interested in dance. The reply:

1. Rhythm.
2. Keep in shape with exercise.
3. Movements in counts without music or with music.
4. Learn to be graceful.
5. Learn how to express your feeling to others; also as a means of communication.
6. Advanced rhythms.
7. Satisfaction to get experience with dancing.
8. Love of performance and travel.
9. Show that nothing is impossible for the deaf.
10. Become creative.
11. Have the will to teach others.
12. There is so much beauty in dance itself.

General Observations

Hopefully, in presenting my subjective observations below, someone could find a topic for study, so that either the truth could be ascertained, or new concepts could eventuate.

Accompaniment

One instrument seems to satisfy all levels of hearing loss: the drum--all can "feel" its beat. Of course, if any of the dancers have some residual hearing, amplified music could be used. On occasion, I have observed that some of the profoundly deaf appear to be aware of the music being played. How this is perceived is unknown to me.

Tactile Cues

The deaf have a keen sense of awareness to vibratory movement. This could be utilized both as a source of satisfaction and as a tool for learning rhythms. That the deaf dance to vibrations is without any substance in fact. I can conceive of no way deaf dancers could move about in space and still be aware of vibrations from the floor.

Dance and Speech

The dance area as an environment for learning speech holds great promise. I have on many occasions heard students counting or singing orally while dancing. Also, the relationship of rhythm in dance and rhythm in speech could be explored.

Movement Recall

I have been, on numerous occasions, astounded by the

ability of the deaf dancers to recall the movements of a dance performed years ago. Do the deaf have a special capacity for recalling movement? Is this due to the dependence on the visual? Is the body, the central nervous system the key to this phenonomen?

Intelligence

It is difficult for me to accept the findings of studies indicating a four to seven year lapse in education. I have been impressed with the apparent superior intelligence of many of my dancers. Are the measuring instruments accurate? Are those doing the testing cognizant of the variables involved? Do they have the necessary communication skills?

Relating to the Hearing

A year ago I became aware of the fear some deaf graduates demonstrated upon leaving the college. When one spends a whole lifetime in schools and then has to face the real world the situation could be traumatic. Two questions need study: (1) Is the condition true in many deaf graduates? (2) What can be done to alleviate this situation if found to be true?

Sensitivity

Since many deaf receive minimal satisfaction from movies, plays, opera, radio, they appear to turn inward for their meaningful satisfactions; play, food, sleep, love. This sensitivity becomes apparent when they perform dances. The total involvement of each dancer in movement during a performance is a moving experience for those in attendance.

Abstracting and Conceptional Abilities

I have read and heard that the deaf are deficient in these areas. My contacts with the deaf lead me to believe that this assumption is without foundation in fact. Perhaps, in addition to other errors in testing, the definition of terms is not clear. Surely, the high level of achievement in the arts, mathematics, programming, etc. is an indication that the deaf are not deficient in this area.

Attitude Changes in Teachers

This is no doubt considered an odd subject, but I feel I must comment on this unique observation. Perhaps my present attitude could be attributed to growing older, but I have this nagging, reoccuring feeling that I am not the same person who started teaching the deaf 20 years ago. My values have changed, my awareness of the world around me is different--in fact, I have become sensitive. The topic, "Effects of Dance" seems to have a two-way effect.

Balance

I have read and heard that the deaf have poor balance. Of course, if the inner ear is malfunctioning this problem could occur. However, in general, I have observed that the deaf have excellent balance, and this was noted not only in dance but in other activities as well. There are many hearing individuals who have poor balance. The idea of labelling all deaf as having a balance problem is certainly open to question.

Communication Insight

I first noted this trait two years ago. I refer here to the apparent ability of deaf individuals to perceive the truth regardless of what a person is saying. Due perhaps to inherent deficiencies associated in communication methods, I believe they tend to study facial expressions and the quality of gestures to ascertain the true intent of the person communicating, and depend to a lesser extent on what is being said.

Concluding Statement

In view of the findings of several studies concerning the deaf, which indicate a great disparity between the deaf and their hearing counterparts, it would seem reasonable to use any vehicle which could ameliorate these differences; dance is one such area.

The informal studies of deaf dancers should shed some light on the attitudes the deaf have toward dance.

My observations should merely be considered as points of departure for further study.

I trust the three dancers, who presented their views on the dance and their performance, gave those in attendance a more significant insight into the effects of dance on the deaf.

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CULTURAL DIFFERENCES BETWEEN HEARING AND DEAF COMMUNITIES

Carol Padden, Linguistics research Laboratory

I will be presenting here a short summary of research conducted by Harry Markowicz and myself at the Linguistics Research Laboratory from the period of June 1974 up until this time. Through observations, interviews and standardized tests, we studied a particular sub-group of Gallaudet College students who entered Gallaudet as first year students having had no contact with deaf individuals prior to their entrance at Gallaudet, and consequently, knew no sign language. I will report here briefly on problems and conflicts encountered by these students as they adjusted to a new community. Important here, also, will be a discussion of a few strategies employed by these students in their efforts to adjust to demands placed on them. This summary of difficulties, conflicts, and adjustments will bear in mind a larger argument in support of two cultures in conflict, the deaf and hearing communities.

The experimental group consisted of twenty-one subjects, fourteen females and seven males.

Briefly, fifteen of these subjects suffered hearing losses either at birth or at/before the age of two (10 females, 5 males). Audiological records of all twenty one subjects' hearing losses showed the range of losses to be from moderate to profound (from 51 DB to 87+ DB).

Eight of these students were enrolled in a post second-

ary program prior to their entrance at Gallaudet. None of these post secondary programs carried special programs for the hearing impaired. All of the 8 subjects reported severe difficulties in the college classroom which influenced their decisions to seek out other educational opportunities.

Eight subjects were 20 years old or older, and found some initial problems in forming peer relations with their preparatory and freshman classmates.

The methodology of investigation consisted largely of individual interviews, usually of one hour duration or longer. Interviews usually started with general questions about the subject's age, where he/she lived, type of school attended, age when the hearing impairment was acquired and how the subject judged the extent of the loss.

The informal interview was then steered toward a more in-depth discussion of the subject's parental and educational background, how he/she was introduced to Gallaudet, reactions from family and friends, and eventually, reflections on how the subject's present Gallaudet life-style differed from the life-style experienced elsewhere. For all of our subjects, we have compiled case histories detailing their family and educational backgrounds as well as their reflections on the progress of their socialization into the deaf community.

We administered two standardized tests one week after the subjects' arrival on the Gallaudet campus. The first, Cowen and Cowen Attitude Toward Deafness (ATD) Scale and

the second, the Tennessee Self-Concept Scale (Fitts 1964). Data from these are still being processed and studied and results will not be discussed here.

An almost universal reaction among our subjects upon their arrival at Gallaudet was one of surprise. Deafness was conceived only as a hearing loss, a physical handicap with social consequences which affect their relations with hearing people. None of the subjects were prepared to find a minority with its own culture and its own language. They expected to be among others like themselves. Instead they found that they could not interact easily with other students. The first barrier they encountered, of course, was language, but behavioral differences struck them as well.

Our subjects realized quickly that a boundary exists between themselves and the deaf community at Gallaudet. This distinction of member and non-member is well exemplified by a sign reserved specifically for reference to those deaf students outside the community. The sign ORAL means an oral deaf person and it is used only in a pejorative sense.

The traits which mark membership in a social group are specified by a "basic identity" shared by its members. Implied in this basic identity is a commonality of experiences and values, which can be expressed in a mutually understandable language. Two individuals who recognize each other as members of the same group know that

they are likely to share similar criteria for judgments of values and evaluation of performance. On the other hand, members of different groups know that such a shared understanding of values and performance cannot be assumed, and that interaction may be limited to areas of mutual interest. Thus, interaction within a group is generally easier and more extensive than with outsiders. This differentiation between members and non-members determines a boundary which serves to maintain the group's self identity.

As we delved more into conflicts experienced by these subjects, we came to understand that the degree of hearing loss is not a consideration since the range of hearing impairment of the subjects is similar to that of other Gallaudet students. The use of American Sign Language seems to be a necessary social requirement.

Talking or the use of spoken English is one of the first noticeable characteristics by which a deaf student identifies outsiders. Our subjects found talking and accompanying behavior crucial in surviving as members of their hearing communities. In the process of their socialization in the hearing community, they were encouraged to function as hearing members, which also meant speaking as normally as possible.

However, when in the presence of other deaf individuals, the subjects' talking behavior no longer allowed them to be accepted into activities of the deaf community. For most

deaf students, talking is viewed negatively and under certain conditions, viewed as anti-social.

For example, within less than 18 hours of his arrival on campus, one subject was tapped on the shoulder by another student, a perfect stranger, who ordered him to stop using his voice. In other words, he was requested to conform with respect to the channel of communication used by the deaf community.

Some subjects have quickly assessed the effects of this behavior and have confined their talking to certain individuals at certain times. Other subjects from long time associations with their more familiar hearing culture, are afraid of too rapid alterations in their behavior, including the manner in which they converse and convey language.

Sociolinguists have presented the theory of language variation as an attempt to describe actual language usage within a community.

Research studies since 1960 have recognized American Sign Language (ASL) as a language distinct from English, with its own vocabulary and grammar and with a set of complex rules for their appropriate use in the deaf community.

ASL does not take exception to the phenomenon of language variation. All signers, either native or fluent, vary the formation, vocabulary, and grammatical rules of their signing depending on the participants in the conversation, the subject being discussed, the formality and informality of the setting, and many other social variables.

Language variation in ASL, as in any other language, is rule-governed, that is, social conditions determine what variety is acceptable to use in a particular context.

We are familiar with incidents when a hearing person joins a conversation already in progress between deaf individuals; the deaf signers, in order to accomodate a person not fluent in ASL, will switch to a variety that incorporates more English elements and may begin to use speech as well. The switching to a more appropriate language variety allows the hearing person to interact more comfortably with the deaf signers. The switching is triggered by a social constraint which requires the use of English with outsiders.

Hearing people are not given the opportunity to interact in ASL, for the most part this accounts for the fact that they rarely learn that language. In this respect, our subjects are treated like hearing people by their fellow deaf students.

The subjects have described several incidents where switching affected them directly. As discussed earlier, switching from ASL to English is a successful social strategy used by deaf individuals to allow for interaction with a hearing person. To not switch, but continue using ASL is, under certain social conditions, an act of rejection and exclusion.

The sign language variety a member of the deaf community uses most often corresponds to his social status in the community. Thus, if a particular social sub-group is

observed to use spoken English or some form of Sign English, this group can be seen as socially unrelated to another sub-group whose primary communicating variety is ASL. These judgments of language variety and social status are made by members of any community. Such judgments are crucial to any community seeking to allow maximum interaction between individuals who share common accepted values and restricted interaction for those who are seen as "intruders" or carriers of conflicting cultural values. Our subjects, during their first months at Gallaudet, are seen by other deaf students as carriers of conflicting cultural values.

Finding an interacting role in the deaf community necessarily requires the ability to recognize sociolinguistic patterns of sub-groups and the means by which a member can identify the social status of an individual from his use of a particular language variety.

In conclusion, excluding potential intruders in any community is a mechanism by which the community seeks to protect its group identity. The deaf community, being surrounded by a larger and dominant hearing community, allows intimate interaction with its members only if the individual exhibits appropriate behavior and language skills.

This experimental group of students experienced exclusion at the time of their arrival at Gallaudet. If the subjects, in order to gain entrance to the deaf community, refuse to abandon behavior they previously considered crucial to survival, we can describe this behavior as incompatible

with existing values of the community.

The process of making adjustments to these conflicts is a long and difficult one. The subjects' anxieties about changing their familiar behavior to accomodate a newer, more acceptable behavior must be understood as a reaction toward conflicts arising from two cultures in conflict.

This study points to the need to recognize the deaf community as a separate cultural entity, particularly for those who wish to join it as new members, but also for outsiders who deal with deaf individuals in a professional capacity.

William C. Stokoe, Director,

Linguistics Research Laboratory

We learn, through our study of sign languages, more about language itself; we learn, by working with deaf people, more about how to be human. Here in brief is the explanation for the Linguistic Research Lab's interest in the culture and language of the deaf community.

Almost all sociometric research into communication networks depends on the cognitive perception of a social system by its own members. Thus, the very interesting pictures we have of social structures are open to criticism. "Yes," the critic says: "This is all very interesting as a picture of what is in people's heads, but what about their actual behavior?"

Up till now, no one has any hard data on human communication of the kind such a critic, and all of us, would like to have. The reason we do not have such data is the strictness of the requirement: the data must be--

1. generated by real people, not by researchers;
2. real events, not experiments;
3. in the natural world, not out of white rooms;
4. behavior, not subjects' ideas about behavior.

For [illegible] this kind of the real-world behavioral kind, we need, if only for comparison, data of the cognitive kind

One way out of this thicket of requirements presents itself. When a group of deaf people who have TTYs first record their cognitive perception of their TTY contact with each other and then save the paper coming out of their machines, it becomes possible to see who actually calls whom, how often, and how long the contact lasts.

Some actual data was secured in this way between January and May of this year. Statistical examination of the data (done by H. Russell Bernard of W. Va. Univ. and Peter Killworth of Cambridge University) shows an almost complete mismatch between the cognitive and actual pictures of TTY communication. For example, the first five persons named by a cooperating member of the study as most frequent contacts are matched less than half of the time, and in different order, by the first five actually appearing on the logs. Somewhat surprisingly cognitive prediction matches better the list of those who call than those that the predicter calls.

All this is so interesting that we are going to try it again with a larger group and a longer logging period. It seems quite clear, however, that social-behavioral reality and an individual's conception of it do in fact differ. One has a natural tendency to forget unimportant, routine contacts and to place more stress on those contacts which somehow mean more; but important and unimportant calls both print on the paper in the TTY roll.

this work is, it actually has a minor role in our present program of research. The basic technique of asking each member of a group to rank order all the others on some such measure as frequency of communication can be processed by Bernard and Killworth to show subgroups within the group and to draw a clear pattern of linkages.

A study we undertook last year, and reported at the American Anthropological Association meetings in Mexico City, was made possible by the cooperation of thirty-three leaders of the deaf community, several of whom are also participants in this symposium. This group represents the elite deaf group in the Washington area, as well as in the national, and the international community of the deaf. Many of the implications of the study remain to be drawn--we are still gathering ethnographic data and using the KBPK (Killworth and Bernard's mathematical program) to analyze it. However, this study, which involves deaf people in the community and LRL staff as co-investigators, has already shed light on two matters often debated.

It has been said--perhaps more often twenty years [illegible] than now--that, in the organizations, the councils, the society of deaf people, hard of hearing or deafened persons will be the leaders. Our study shows that in four cohorts, i.e. close knit groups of people about the same age (all [illegible] years) with average ages approximately 60, [illegible], [illegible], 50, the average age at onset of deafness goes

ing had some truth thirty years ago, it has lost most of it now. The prelingually deaf are gaining positions of power.

Second, it has been said repeatedly by those interested in certain methods of education for the deaf, that the deaf will sign anyway, but that only proficiency in English can be of any practical use to deaf persons, and that therefore the educational program must concentrate on English speech and language. In fact, as one would expect, high government officials, academic officers, professional people, and other leaders who are deaf do have a high degree of English language skill; but membership in the elite group is not determined by that criterion alone. To be at the top, to make it in the upper levels of the deaf community we must know and use Sign. In the group studied, some of the members were without a college degree, yet linked closely to the sources of power. However, one person with graduate degrees who did not sign, was shown by the linkage patterns not to belong to this group. In short, English skills need to be high, but without Sign one does not make it in the deaf world.

Questions and Answers [illegible] After Stokoe

Q. Are these [illegible] printouts unexpurgated? (Laughter)

A. [illegible] - we don't see them anyway. All we want to know is who called, who answered, and how many lines of [illegible] the computer [illegible] out on the yellow paper.

Q. So you're a survey of the use of business TTY-phones only?

A. No; we ask the person cooperating: How much do you use the TTY altogether, at home, at the office, even on a trip.

Q. Isn't it possible to line up qualitative contact with quantitative contact?

A. In the first study, we simply looked for amount of TTY communication, how many calls from whom to whom and how long they lasted. Some cooperators did indicate that amount of communication and importance of communication were two different matters.

Q. What about the language level of the communicators?

A. Again, we do not get that data, just the number of calls, the caller, and the length of the contact. We are interested, however, once we find the lines of maximum communication, to know whether persons maximally linked have similar Sign and English skills.

Q. Will the others you mentioned (Bernard of the University of West Virginia, and Killworth of Cambridge University) be studying hearing people or deaf people?

A. They work themselves only with hearing people; we work with deaf people, but Bernard and Killworth process the numbers we give them in the West Virginia computer. They have no direct contact with the deaf but are fascinated with the data we show them. Partly because communication in deaf society confirms what they are finding about communication patterns generally and more so be-

cause the deaf telecommunicators network gives a unique way to get at recorded real data.

Q. Do you think that the TTY conversations reflect behavior in general in the community?

A. Don't think so. Many people never use the TTY to contact their closest and most influential associates - they work in adjoining offices, or see each other so often TTY is not used.

Q. The number of people who have TTYs is small, not typical of the deaf or the hearing community.

A. That is true, but all people are typical of people. The important point is that people communicate but that those with TTYs have an automatic record of one part of their communication (if they don't throw out the paper too quickly) and with that it is possible to see how their communication behavior correspond to their own ideas about it.

A STATISTICAL INVESTIGATION OF THE 16PF FORM E AS APPLIED TO HEARING IMPAIRED COLLEGE STUDENTS

Carl Jensema

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Abstract

A statistical analysis was conducted on Sixteen Personality Factor Questionnaire Form E data collected from incoming students at Gallaudet College. Norms were presented and some of the test's statistical characteristics related to reliability and validity were explored. Low reliability was noted for most of the test's 16 scales and the test would profit from a careful revision of its items for use on hearing impaired persons.

Introduction

A glance through the catalogues devoted to psychological measuring instruments quickly reveals a multitude of tests purported to measure personality. However, finding tests which have been designed, or at least revised, for application to hearing impaired persons is another matter. Such tests are virtually unheard of. The standard mode of operation for professionals who work with the hearing impaired has been to simply pick out some personality test which "looks good", more or less disregarding the fact that the test was designed for use with individuals who have normal hearing.

One of the most unfortunate aspects of this practice is that people are often deluded into thinking that since a hearing impaired person had no particular problems in taking the test, the results are as meaningful as they would be for a person with normal hearing. Such an assumption completely overlooks a fundamental concept underlying test theory: every good test is statistically designed to measure among a specific population. Application to any other population raises important questions concerning reliability and validity. This is not to say that a test is worthless for any population but the one it was designed for. It means that the test's worth must be determined by statistical analysis before it can be used with confidence.

One of the paper-and-pencil personality tests used by counselors of the hearing impaired is Form E of the "Sixteen Personality Factor Questionnaire" (16PF). This test was designed by Cattell and Cattell in 1967 and is considered appropriate for low-literate adults with a 3rd to 6th grade reading level. As the name implies, the 16PF Form E is considered as measuring 16 aspects of personality. Each factor has eight binarily scored items and the raw score of a factor is simply the sum of these scored items.

Trybus (1973) reported on the use of the "Sixteen Personality Factor Questionnaire" (16PF, Form E) on a group of 112 female and 138 male hearing impaired students at Gallaudet College in Washington, D.C. The Trybus study

presented norms for each of the two sexes and compared them with data from appropriate normative groups discussed in the Interim Manual Supplement for Form E (Eber and Cattell, 1971).

The data used by Trybus were collected from students who entered Gallaudet College in the summer of 1971. Since that time additional data have been collected from each succeeding class of incoming students, the most recent being those entering in the summer of 1974. This much larger sample size allows the calculation of a more accurate set of norm tables and permits a better investigation of the test's statistical characteristics.

Method

The data consisted of 128 binarily scored items of the 16PF Form E from 414 female and 404 male hearing impaired students at Gallaudet College. All students had at least a moderate hearing loss (BEA > 40 dB ISO) and the great majority had a profound loss (BEA > 90 dB ISO). The mean age for both sexes was 19.8, with a standard deviation of 4.5 years for males and 4.3 years for females.

Since each of the 16 scales of the 16PF is assumed to measure a separate aspect of personality, and since sex differences significant beyond $P < .01$ were found for 9 of the 16 factors, the data were treated as being 32 short eight-item tests, each having been given to either 414 or 404 subjects. An item analysis was conducted on the data

from each of these short tests and the results will be presented in the sections to follow.

Norms

Table 1 gives a short description of the meaning of high and low scores on each of the 16 factors, as well as the raw score means and standard deviations for the two sexes. Asterisks are used to indicate factors having significantly different female and male means. In comparison with males, females appear to be more outgoing, emotionally stable, humble, conscientious, shy, tender-minder, trusting, apprehensive, and tense.

The sten score conversions of raw scores for males and females are given in Tables 2 and 3. The sten scores are a rescaling of the raw scores in which a sten score mean of 5.5 equals the raw score mean and the difference between each whole sten unit is one-half of a raw score standard deviation. The sten conversion tables are used by finding the sten score corresponding to the appropriate factor (row) and raw score (column).

The use of sten scores has both advantages and disadvantages. Being standardizations, they are more comparable and interpretable than raw scores. But sten scores are also more trouble to compute and imply a symmetric distribution which may not exist. These considerations led to a more careful investigation of raw score distributions in the sample. Table 4 gives the percentages of

females and males having each raw score on each factor.

Table 4 clearly shows that the distributions for some of the factors are extremely skewed. For example, 40 percent of the males have a raw score of 8 on factor B. This suggests it is better to work directly with the raw score distributions that to force a symmetric distribution through sten score rescaling.

The most convenient way to handle the situation is the utilization of the centile rank distribution of raw scores for a factor. Suppose a line of fixed length is drawn and divided into segments whose lengths represent the proportions of the norm group getting particular raw scores on a particular factor. Assuming these segments are arranged in ascending order of raw score values, the position of a segment (raw score) in the line gives an estimate of the position, relative to the norm group, of a person who obtains that raw score. Quick-scoring forms based on this principle have been devised and are presently in use at the Gallaudet College Counseling Center.

Reliability and Validity

The extensive norm tables which have been presented are of little value unless they are accompanied by some indication of the test's reliability and validity. The term "reliability" relates to the consistency with which a test measures while "validity" is concerned with the question of what the test measures. [illegible] require a review

Table 5 gives the proportion of each sex who obtained a score of "1" on each particular item. A careful examination on Table 5 and items in the test booklet raises some intriguing questions about differences in response tendencies for the two sexes. For example, why would 95% of the females but only 36% of the males claim they were critical of other people's work (item 116)? Other items refer to the examinee's relationship to groups and it is not clear whether they take this to mean a group of hearing people or a group of deaf people. The proportions obtained for some items are too extreme for the items to have much measuring value. For example, 96% of the females and 92% of the males scored "1" on item 1. Such high proportions automatically lower total score reliability. Any attempt to revise the 16PF for use with the hearing impaired should carefully consider Table 5 and ask <u>why</u> some items have such extreme response tendencies.

The point-biserial correlations between each item and the sum of all other items of the factor are given in Table 6. The higher the correlations, the higher the reliability of the factor. Unfortunately, a glance at Table 6 shows that the correlations are low, the highest being .46 for females on item 55. The items for Factors M and N are dominated by near-zero and negative correlations, indicating little or no relationship.

The Kuder-Richardson formula-20 [illegible] reliability

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Mr. Eli Savanick, Head Resident Clerc Hall
Kathryn Walker, Head Resident Cogswell Hall
Mr. Larry Witner, Head Resident Krug Hall
Ms. Mary Martone, Head Resident Post Hall
Ms. Fern Reisinger, Head Resident Fowler Hall
Mr. Hank Young, Head Resident Ely Hall

Student Services

Dr. Richard Phillips, Acting Head
Mr. Hartley Koch, Coordinator of Counselors
Ms. Dianne Smith, Counselor
Ms. Claire Timmons, Counselor and Foreign Student Advisor
Ms. Marilyn Galloway, Placement Officer
Mr. Dan McHugh, Placement Counselor
Mr. Jim Magrass, Placement Counselor
Dr. Joe Poirier, Psychologist
Ms. Carol Tryon, Secretary, Counseling Center
Ms. Diana Bonnes, Secretary, Counseling Center
Ms. Mae Spruill, Secretary, Placement Center

Special Services

Ms. Mary Anne Royster, Director of Special Services
Ms. Debra Grant, Secretary

A problem faced by every individual in the adolescent and young adult years is that of developing vocational maturity--that set of knowledges, attitudes, and choices which constitute the movement into adult forms of career and vocational activities. The experience of anyone who has worked with deaf young people during this transition is that, as with many developmental tasks, it is even more difficult and complex than for those with unimpaired hearing. Ms. Botz's study was an attempt to describe the level of vocational maturity of Gallaudet preparatory students, and to examine the relationships among maturity level and a variety of personal characteristics. This study constituted her master's thesis at the George Washington University.

The Vocational Development Inventory produced by John O. Crites was the instrument used in the study. The inventory consists of 50 to 100 items (depending on the form used) to which the respondent is asked to indicate "True" or "False" as the item applies to himself/herself. An immediate problem in the use of any written test or inventory with deaf people is the reading level required. The VDI requires about a fifth grade reading level; since the data reported earlier by Dr. Reynolds indicated that

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STEN SCORE CONVERSIONS FOR HEARING IMPAIRED COLLEGE FEMALES
(N = 414)

	RAW SCORE								
ACTOR	0	1	2	3	4	5	6	7	8
A	1.0^-	1.0^-	1.0^-	1.4	2.9	4.4	6.0	7.5	9.0
B	1.0^-	1.0^-	1.0^-	1.0^-	1.5	3.0	4.6	6.1	7.6
C	1.0^-	1.0^-	1.0^-	1.9	3.1	4.4	5.6	6.9	8.1
E	2.0	3.4	4.7	6.0	7.4	8.7	10.0	10.0^+	10.0^+
F	1.0^-	1.0^-	1.4	2.5	3.6	4.7	5.8	6.9	8.1
G	1.0^-	1.0^-	1.2	2.6	4.1	5.5	6.9	8.4	9.8
H	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
I	1.0^-	1.0^-	1.0^-	1.2	2.6	3.9	5.2	6.6	7.9
L	1.1	2.4	3.8	5.1	6.4	7.8	9.1	10.0^+	10.0^+
M	1.0^-	1.8	3.2	4.6	6.1	7.5	8.9	10.0^+	10.0^+
N	1.0^-	1.0^-	2.1	3.6	5.2	6.7	8.3	9.8	10.0^+
O	1.0^-	1.8	2.9	3.9	5.0	6.0	7.1	8.1	9.2
Q_1	1.0^-	1.3	2.4	3.6	4.8	6.0	7.2	8.3	9.5
Q_2	2.6	3.7	4.8	5.9	7.1	8.2	9.3	10.0^+	10.0^+
Q_3	1.0^-	1.0^-	1.0^-	2.1	3.5	4.9	6.4	7.8	9.2
Q_4	1.7	2.9	4.1	5.3	6.4	7.6	8.3	10.0	10.0^+

(Body of table contains the sten scores corresponding to each possible raw score for each factor)

HEARING IMPAIRED COLLEGE MALES
(N = 404)

ACTOR	RAW SCORE 0	1	2	3	4	5	6	7	8
A	1.0⁻	1.0⁻	1.8	3.0	4.2	5.4	6.6	7.7	8.9
B	1.0⁻	1.0⁻	1.0⁻	1.0⁻	1.5	2.9	4.4	5.8	7.2
C	1.0⁻	1.0⁻	1.9	3.1	4.4	5.6	6.9	8.1	9.4
E	1.2	2.6	3.9	5.2	6.6	7.9	9.2	10.0⁺	10.0⁺
F	1.0⁻	1.0⁻	1.3	2.4	3.5	4.6	5.7	6.8	7.9
G	1.0⁻	1.0⁻	2.2	3.5	4.8	6.2	7.5	8.8	10.0
H	1.0⁻	1.6	2.9	4.1	5.4	6.6	7.9	9.1	10.0⁺
I	1.1	2.1	3.2	4.2	5.3	6.3	7.4	8.4	9.5
L	1.0	2.2	3.5	4.8	6.0	7.2	8.5	9.8	10.0⁺
M	1.0⁻	1.8	3.2	4.6	6.1	7.5	8.9	10.0⁺	10.0⁺
N	1.0⁻	1.0⁻	2.3	3.8	5.4	6.9	8.4	10.0	10.0⁺
O	1.0	2.1	3.4	4.6	5.7	6.9	8.1	9.3	10.0⁺
Q_1	1.0⁻	1.0	2.2	3.5	4.8	6.0	7.2	8.5	9.8
Q_2	2.7	3.7	4.8	5.8	6.9	7.9	9.0	10.0	10.0⁺
Q_3	1.0⁻	1.0⁻	1.1	2.4	3.8	5.1	6.4	7.8	9.1
Q_4	2.4	3.5	4.6	5.6	6.7	7.7	8.8	9.8	10.0⁺

(Body of table contains the sten scores corresponding to each possible raw score for each factor)

TABLE 4

PERCENTAGE OF EACH SEX OBTAINING EACH RAW SCORE

FACTOR	FEMALE (RAW SCORE)									MALE (RAW SCORE)								
	0	1	2	3	4	5	6	7	8	0	1	2	3	4	5	6	7	8
A	0	0	1	4	14	26	28	21	6	1	2	5	10	14	24	23	14	7
B	0	0	0	3	6	11	22	28	30	0	0	0	2	7	10	14	27	40
C	0	1	6	13	15	25	22	14	4	0	2	6	14	20	20	22	14	4
E	5	20	25	27	12	6	3	1	1	4	8	23	26	20	12	6	2	0
F	1	2	4	8	9	16	19	24	17	0	2	3	7	12	16	20	19	21
G	0	1	3	9	25	25	22	10	4	0	2	7	17	25	26	15	7	2
H	6	13	17	19	13	12	14	6	2	4	9	9	16	16	20	18	6	2
I	0	0	2	4	11	14	20	28	21	2	6	11	15	21	19	13	7	4
L	2	8	19	29	23	11	6	1	1	2	7	14	24	22	19	9	3	0
M	1	6	17	26	27	16	6	2	0	1	5	16	27	27	15	7	2	0
N	1	1	7	19	31	28	10	3	0	0	2	8	23	31	24	10	3	0
O	1	5	10	13	18	21	17	10	5	3	6	15	18	22	19	11	4	1
Q_1	3	3	7	10	22	20	23	11	4	0	3	9	15	22	21	19	11	2
Q_2	9	24	20	18	15	6	4	3	1	13	19	20	18	11	8	6	4	1
Q_3	0	1	4	7	13	25	27	20	4	0	1	4	9	15	26	22	20	4
Q_4	3	12	19	22	19	14	6	3	1	9	17	22	19	14	11	4	4	1

TABLE 3

PROPORTION OF SUBJECTS SCORING "1" ON EACH ITEM
of the 16PF FORM E

	FEMALE (N=414) TEST ITEM NUMBER								MALE (N=404) TEST ITEM NUMBER							
FACTOR	1-16	17-32	33-48	49-64	65-80	81-96	97-112	113-128	1-16	17-32	33-48	49-64	65-80	81-96	97-112	113-128
A	.96	.78	.56	.90	.58	.91	.33	.64	.92	.61	.6[illegible]	.72	.49	.80	.36	.55
B	.66	.81	.91	.98	.90	.71	.64	.95	.78	.81	.92	.98	.86	.64	.80	.96
C	.76	.58	.33	.77	.72	.78	.36	.72	.75	.50	.35	.77	.69	.75	.36	.70
E	.15	.32	.59	.36	.17	.71	.64	.95	.26	.34	.57	.45	.28	.64	.28	.36
F	.87	.46	.66	.76	.96	.81	.61	.54	.91	.56	.65	.69	.95	.82	.64	.56
G	.28	.80	.37	.79	.70	.52	.88	.63	.23	.70	.36	.68	.65	.46	.79	.60
H	.72	.43	.41	.36	.50	.24	.33	.46	.73	.45	.57	.[illegible]	.62	.27	.40	.56
I	.81	.56	.63	.93	.74	.88	.87	.77	.42	.30	.41	.74	.56	.52	.63	.61
L	.18	.65	.[illegible]	.64	.17	.46	.37	.53	.24	.67	.38	.65	.30	.48	.33	.57
M	.19	.76	.48	.59	.40	.58	.23	.40	.35	.62	.51	.54	.41	.55	.28	.32
N	.49	.79	.67	.43	.58	.58	.36	.29	.56	.65	.67	.44	.57	.64	.25	.24
O	.65	.59	.50	.43	.70	.66	.64	.34	.68	.53	.39	.31	.58	.47	.54	.26
Q_1	.41	.46	.81	.64	.31	.87	.73	.52	.51	.42	.76	.68	.23	.84	.72	.40
Q_2	.55	.26	.24	.42	.30	.47	.24	.11	.46	.35	.31	.43	.27	.36	.33	.17
Q_3	.31	.52	.75	.84	.73	.58	.87	.77	.26	.54	.74	.68	.71	.64	.82	.83
Q_4	.46	.15	.61	.47	.16	.25	.42	.71	.43	.28	.49	.41	.14	.24	.36	.53

TABLE 6

POINT BISERIAL CORRELATION OF ITEMS WITH ITEM -EXCLUDED SUBTEST SCORES for the 16PF FORM E

	FEMALE (N=414) TEST ITEM NUMBER								MALE (N=404) TEST ITEM NUMBER							
FACTOR	1-16	17-32	33-48	49-64	65-80	81-96	97-112	113-128	1-16	17-32	33-48	49-64	65-80	81-96	97-112	113-128
A	.02		.10	.16	.10	.08	.10	.10	.18	.24	.14	.33	.22	.21	.18	.25
B	.07	.36	.12	.11	.43	.37	.26	.02	.24	.43	.09	.04	.46	.37	.30	.09
C	.18	.21	.12	.21	.30	.05	.16	.21	.18	.21	.16	.20	.21	.04	.11	.21
E	.16	-.02	.05	.13	.15	.14	.04	.04	.15	.12	.08	.06	.14	.00	.16	.18
F	.30	.31	.40	.44	.22	.46	.38	.38	.13	.33	.36	.42	.26	.32	.35	.35
G	.25	.06	.18	.06	.06	.10	.12	.03	.15	.11	.16	.05	.10	.12	.06	-.02
H	.32	.38	.41	.11	.44	.17	.40	.28	.39	.36	.36	.16	.31	.10	.38	.21
I	.28	.23	.22	.13	.18	.32	.09	.19	.33	.25	.15	.22	.26	.36	.20	.29
L	.13	-.05	.10	.12	.18	.02	.21	.14	.07	.06	.16	.15	.15	.05	.16	.12
M	-.02	-.06	.04	-.07	.01	.09	.08	.15	-.01	.03	.03	.04	-.09	.05	.00	.08
N	-.08	.00	-.04	-.05	-.01	-.08	-.08	.01	.07	-.04	-.08	-.01	-.13	-.05	.00	-.11
O	.24	.25	.26	.32	.20	.31	.18	.25	.24	.26	.20	.23	.05	.21	.08	.20
Q_1	.41	.40	.15	.25	.01	.32	.31	.01	.38	.40	.14	.09	.03	.22	.33	.02
Q_2	.22	.43	.29	.20	.23	.27	.34	.36	.17	.43	.44	.15	.22	.36	.38	.45
Q_3	-.03	.14	.23	.16	.27	.01	30	.09	-.07	.09	.22	.13	.26	.11	.29	.03
Q_4	23	.20	.23	.16	.34	.31	.25	.20	.18	.28	.29	.24	.34	.33	.33	.30

TABLE 7

KR-20 Reliability Coefficien..

	A	B	C	D	F	G	H	I	L	S	N	O	Q_1	Q_2	Q_3	Q_4
male																
=414)	.22	.68	.12	.22	.67	.27	.62	.46	.26	.08	-.14	.54	.49	.58	.33	.51
le																
=404)	.43	.56	.39	.28	.62	.24	.58	.54	.30	.05	-.15	.42	.45	.61	.32	.58

[illegible] HEARING IMPAIRED STUDENTS

[illegible] PROGRAMS

[illegible], Director

[illegible]

[illegible] which I just reported, [illegible] in socioeconomic status between [illegible] and those from day schools, we [illegible] Studies have some new data [illegible] really hot off the [illegible], I'll give it a chance to cool a bit while I [illegible] and mission of the Office of [illegible] and its Annual Survey of Hearing Impaired [illegible] and youth.

[illegible] conference was held in Bethesda [illegible] what was then called the National [illegible] of Neurological [illegible] and Blindness (NINDB), [illegible] of statistics on severe hearing [illegible] educators, researchers, and [illegible] parties at the conference bemoaned the [illegible] data in this area simply did not [illegible] of this conference were that the federal [illegible] should take steps and provide the [illegible] available such statistical information. [illegible] from the recommendations of [illegible] National Census of the Deaf [illegible] the National Association

of statistical monographs, journal articles, and presentations at professional meetings; second, by preparing a variety of standard and tailor-made reports to the participating schools which are the sources of our data; and third, by engaging in collaborative research projects with researchers outside our office.

The data I want to discuss here arose from our largest single project, the achievement test standardization project of 1974. To make a long story short, from the national population of approximately 55,000 students in special educational programs for the hearing impaired, we selected a stratified random sample of 10,000 students. On this sample we obtained a complete file of demographic information; on those 7,000 who were age-eligible we also obtained a file of achievement test data from the 1973 Stanford Achievement Test, Special Edition for Hearing Impaired Students; and on a sub-sample of 1500 students we obtained a variety of further information from the students' [illegible] and classroom teachers. One such item of information [illegible] the family income, and was obtained directly [illegible]. While economic information of this kind [illegible] for some individual schools (such as [illegible] not, to my knowledge, been [illegible] nationally representative [illegible] reported family annual income [illegible] program the student attended, [illegible] differences. Since these data

[illegible] based on preliminary runs and need much more careful study, I will report them only in broad outline. The families of children in itinerant programs had an average income in the vicinity of $15,000; for those in part-time special [illegible] and part-time integrated in regular [illegible], the average income was $13,500. Students in full-time special classes, in residential schools for the multiply handicapped, and in resource room programs all [illegible] family incomes of around $12,000. Those families [illegible] children were in residential schools for the deaf had average incomes around $11,000, and those whose children were in day schools for the deaf had average [illegible] around $9,000. The economic differences are therefore [illegible], and these differences are reflected in the achievement scores earned by the children. Even when achievement scores were adjusted for the effects of differences in age of the children, degree of hearing loss, age at onset of the loss, number of additional handicapping [illegible], the presence/absence of mental retardation, [illegible] background of the student, the results [illegible] showed the highest achievers to be those from the [illegible] families, and lowest achievers to be those [illegible] income families. This is hard evidence, [illegible] operative in [illegible] children, even when other [illegible] [illegible] further [illegible] [illegible]

the various types of special educational programs available, since such studies must now account for the concomitant effects of differences in family economic level.

This is as far as I can go with these data today. I hope that this example gives you some idea of the potential value inherent in the enormous data base which we have assembled at the Office of Demographic Studies. We are now collaborating with a variety of outside researchers on projects of mutual interest. With Thomas Goulder of St. Elizabeth Hospital Mental Health Program for the Deaf we are studying the observed school behaviors of deaf children with and without emotional problems in comparison with those of hearing children with and without emotional problems. With Harry Hoemann of Bowling Green University we are studying the details of the learning of correct spelling in deaf children. With Robert Harris of the University of Rochester we are assisting in a study of the development of impulse control in deaf children of deaf versus hearing parents. With Joyce Hecht of Syracuse University we are working on a study of the characteristics of children which influence decisions about the appropriate type of educational placement. And the list goes on and on. I invite you and challenge you to work with us on projects in which our collaboration with you can mean a significant contribution to knowledge and to the advancement of services to deaf people. I hope that I have perhaps interested you and inspired you to accept that invitation and challenge.

Questions and Answers:

Q. Maybe you can describe the "user studies" your office is working on.

A. Yes I will, briefly. We are moving on several fronts in this area of accountability studies, which for us means the utilization of the data and services we have to offer. We are now surveying about 2800 people on our publication mailing list, asking which of our publications were useful to them for what purposes, what topics they need future information on, and their job titles and affiliations with the field of deafness. We are also asking our participating schools to evaluate the usefulness to them of the various reports we prepare for them. And we are keeping a careful file of all other requests for assistance or collaboration which are of greater scope than simple telephone or letter replies, or which are answerable simply by sending copies of published materials. From January 1 to May 31 of this year, 1975, we handled 194 such data requests and collaborative projects, ranging from the large cooperative studies mentioned above to the preparation of estimates of the enrollment of hearing impaired children in Montgomery County over the next five years, and to the design and conduct of surveys of the Kendall School faculty regarding their needs and expectations for the research department soon to be established there.

Q. How many cases are involved in the economic data you reported?

A. For that study we directed a questionnaire to the parents of a random subsample of the 10,509 students in our achievement testing program national stratified random sample. The sampling rate was 15% and the final sample selected contained 1,562 children. Responses were received from 787 parents, for a return rate of 58%. Since a percentage of children leave school during the year (transfers, dropouts, etc.), a number estimated at 150 children for this sample, the "true" response rate considering only those parents whose children were still in the same school would be about 65%. Of those who responded, 95% provided income data. A first review of the characteristics of the non-respondents suggests that they are approximately randomly distributed so that respondent bias will not be a significant problem.

Q. Was the number of cases different for each of the program types?

A. Yes, they varied according to the proportion in the population so that the "residential school for the deaf" group was the largest, while the "resource room" group was smallest, with the others falling in between.

Q. What is the difference between a "day school" and a "day class"?

A. A day school is a school devoted entirely to deaf children--where no hearing children are enrolled. A

day class means a class of deaf children which is contained in a school consisting primarily of children with normal hearing. A deaf child may spend either all or part of the school day in such special classes. We are presently involved in what we call our "Institutional Survey," which is a description of the personnel, facilities, and services available in special educational programs for the hearing impaired across the country. The results of this survey, probably in two reports, will be published in the coming year and will constitute a description of just what commonalities and variations are involved in program labels such as "day school for the deaf."

SEXUALITY INFORMATION AND PROBLEMS OF DEAF ADOLESCENTS AND ADULTS

James C. Achtzehn, Graduate School

Introduction

This presentation, while related to the author's dissertation, is basically a report on the need for research in the area of human sexuality and deafness. With the aid of the overhead projector, I am providing primarily quotations from sex educators, counselors, and other experts in the area of human sexuality, giving support to the need for research in this area.

Presentation

> Sexuality exists in every human being. It is a life force, and it must be integrated into each individual's total personality at each particular age level. (Block, 1971, p. 168)

Sex education is perhaps one of the most hotly debated, most widespread arguments in American education today. (Baker, 1969; Breasted, 1971; Drake, 1968; Somerville, 1971; Zazzaro, Aug., 1969; Zazzaro, Sept., 1969)

> Today's youth are being raised in a sexually oriented society. There is much more permissiveness than ever before--permissiveness which shows up abundantly in the mass media. (Leach, 1969-70, p. 2)

> Youth today are not better informed. They simply have sexual experiences earlier and more frequently. Sex education in the schools is essential before we can begin to stem the rising tide of venereal disease, premarital pregnancies, the grim death rate resulting from with doctor abortions, and the increasingly large number of adults suffering from problems such as impotence, frigidity, and compulsive preoccupation with sex. (Gordon, 1969, p. 26)

> In 1973, an estimated 700,000 teenage girls became pregnant out-of-wedlock.
> During the same period, more than half a million cases of venereal disease among young people were reported.
> These studies also indicated that somewhat over half the nation's teenagers will become sexually active before they finish high school. (McCoy, 1974, p. 18)

At this point a question was raised asking that "sexually active" be defined. It was defined in this context as being involved in sexual intercourse.

> U.S. Census figures show--1950-1970--adolescent (ages 10-21) population doubled from 20 million to 40 million.
> Young people today may not be any more sexually irresponsible--problems tend to be more visible statistically.
> Experts see these "problems" as end-products of deeper problems regarding sexuality in our society. (McCoy, 1974, p. 18)

Another question was raised as to who the experts were. They were defined as sex educators and counselors working in the field of adolescent sexuality. Some brief discussion ensued as to how they came to these conclusions.

> The more ignorant adolescents are about sex, the less they are safeguarded from the consequences of their sexual behavior. (Gordon, 1971, p. 27)

> Every study that has ever been conducted among youth reveals that the home and church are their least important significant sources of information about sex. The question is not whether we want sex education--it is more whether we are satisfied with sex education received through the "sexploitating" popular media, pornography, myths from the gutter, and graffiti in our public-school bathrooms. (Gordon, 1969, p. 26)

> Several studies suggest knowledge college students have accumulated about sexuality is fragmented, based in part on myths and misconceptions (McCary, 1971), contradictory in many respects (Wilson, 1971), and grossly inadequate in several areas (Crist, 1971). (Wilson, 1974, p. 3)

Teachers and doctors meeting with 18 to 21-year-olds have listened dumbfounded as college students asked such questions as:

- Can I get pregnant if I didn't have an orgasm?
- Can a person get pregnant while standing up?
- My mother told me an unmarried girl couldn't use Tampax. Is this true?
- Can sperms live in bathtub water?
- Is it true there are some days I can conceive and other days when I can't?

(Malcolm, 1971, p. 27)

For example, Greenbank (1961) found that half of the 1959 graduates of a Philadelphia medical school were under the misconception that mental illness is frequently caused by masturbation. (In the same study, 20% of the faculty members also believed that this was true.) (Juhasz, 1967, p. 110)

Handicapped children with the same emotions and sexual drives as their "normal" counterparts but with less knowledge, as well as the disadvantaged youth with all their "experience", are by far the most vulnerable segment of our youth population with regard to sexual exploitation and pathology. (Gordon, 1971, p. 65)

Parents seem to operate on the false assumption that the less an exceptional child knows about sex, the less likely he will be irresponsible sexually. Educators seem to operate on the assumption that they have enough trouble teaching reading; why get into "sensitive" issues? (Gordon, 1971, p. 65)

It is quite obvious that if traditional American sex mores are changing for the hearing person, then sex mores for the deaf youngster are also changing. One of the most obvious factors in connection with this change is the freedom with which sex and sex consciousness is displayed in advertising, television and movies. The deaf youngster does not have the verbal taboos that usually accompany the visual presentation of this subject matter. (Withrow and Lisensky, 1966, p.)

Children with hearing and language problems differ in no way from their hearing counterparts in their need for the satisfaction of curiousity regarding anatomical differences between the sexes, and for information about the processes of reproduction. If anything, there may be a greater urgency for satisfying their need because of their hearing and language handicap. (Chaplin, 1957, p. 201)

> Parents, school authorities, house parents, and society in general, in their anxiety and concern over the youngster, and his likelihood of being influenced by unsavory people, have tended to overreact by providing almost no positive information in this area of life. Instead, they have created an atmosphere of taboo and inhibition with respect to sexual relations between boys and girls under their care. (They have built walls between the boys dormitory and girls' dormitory) These are not literally physical walls, but walls of inhibition, fear and ignorance. (Withrow and Lisansky, 1966, p.)

Discussion

There was some discussion about the possibility of schools encouraging homosexuality by separating boys and girls while in residence in the school, and punishing students caught in heterosexual acts. This discussion led to a presentation of examples of questions collected by the author during the summer and fall of 1973, at Gallaudet and the National Technical Institute for the Deaf. These questions were written anonymously by the students on cards and turned in during question and discussion sessions. The students ranged mostly in age from entering students at NTID and preparatory students at Gallaudet to seniors at Gallaudet, approximately 18 to 24 years of age. These questions are presented here in the students' own language, and cover all areas of sexuality, much the same as questions from other college samples.

> -Why are people so afraid to talk about sex? Why did more girls than boys come tonight?
>
> -Is it possible that we men have an active sex life after forty?
>
> -Have proved that men's climax go down very fast while women continue for hours!

> tives of these programs? and, perhaps most important, what is "sex educati n"?--the war between the sexes (the anti-sex education groups and the pro-sex education groups) continues. (Wilson, 1974, p. 1)

[illegible] find out what information and attitudes the student possesses. Originally planning to do a survey among hearing and deaf college students as to their information, attitudes, and behaviors concerning human sexuality, the author discovered that we really do not have valid instruments for testing attitudes and knowledge, particularly with the deaf. Existing sex inventories are not suitable--[illegible] studies seem to have met or taken into consideration established criteria for reliability or validity. They [illegible] replete with vague and ambiguous statements, are subjective reports of programs or other experiences, or have not been treated statistically". (Wilson, 1974, p. 65) At present, the author plans to conduct video taped interviews with young deaf adults, concerning their knowledge of human sexuality. These tapes will then be content analyzed, and from this analysis a preliminary sexual inventory will be developed.

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A better title for this talk might be researchable topics at this college. Dr. Williams, in describing this conference to me, emphasized the fact that he thought it important that at a first meeting we raise what we perceive as important, researchable issues. I perceive so many that it would be impossible to discuss them all, so I will focus on a few and save the rest for future meetings.

I went to college in the middle 60's. It was a good time to go to college. The 50's was still a time of crew cuts and coats and ties, and their advisors recommended--without question. The late 60's and early 70's were bad because of too much unrest and turmoil, not a good atmosphere for learning. But the middle 60's were good because we began to question things, and we learned that if we asked enough of the right kind of questions we could initiate change. (Some of you may remember how we closed the college in 1966 because of questions about the effectiveness of the infirmary.) This questioning was very good for me, and I like to think that asking questions has become a very important part of my life. It is that questioning that I want to talk about today. There are a lot of questions at Gallaudet which must be answered.

What I perceive as the primary question at Gallaudet concerns the whole raison d'être. We take a kid who reads

who should be able to compete in skills and knowledge with most college graduates with liberal arts educations. You've seen the end product. Do we achieve that goal? Sadly, I am afraid not.

So we have to question . . . why? One thing which seems most obvious to me is the attitudes about what college is which the majority of students bring here.

What is the primary reason for coming to and being a part of Gallaudet? Someone yesterday said that the primary responsibility of students was learning. Do students perceive this as their primary responsibility? Again, I think not.

Do you know what they think? They think:

> The most important reason for being here is the social life.
>
> Education is the responsibility of teachers, whether or not they succeed here is up to the faculty and the administration.
>
> Gallaudet offers a 2nd rate education, "hearing colleges" are harder . . . and better.
>
> Anti-hearing attitudes abound on campus. If you don't believe that, you are either very naive or you are hearing!

I could go on, but you are researchers and you will ask me for documentation, and I don't have it. We need to get it!

with other students. We need to know more about the attitudes of students:

1) Attitudes toward college

2) Attitudes toward teachers; deaf teachers, hard of hearing teachers and hearing teachers

3. Attitudes toward other students; deaf, hard of hearing, oralist, manualist, from deaf families, from hearing families

4) Attitudes toward the administration.

Do you know that there is a freshman-sophomore next year (if she comes back next year) who became deaf late, a good student who was a resident student for a year, and left without one real, close friend? Know why? The students suspect he's a narc. Who is to tell them different? The girls? Jean Schuchman? President Merrill?

We need to know about these attitudes, and finding out about them is going to be no easy task. You heard Vic Galloway admit that his data were really worthless. You heard later that the attitudes of deaf students toward deaf-blind are very positive. Are they? 87% of the respondents would like to have a deaf-blind person as a close friend. That is a very rosey picture, but I wonder how realistic it is. It is one thing to talk about the reliability of an attitude questionnaire, but something else again to talk about validity. Move some deaf-blind students into a dorm and see how many of those 87% become close friends.

Before I say anything more, let me try and make my position clear. My primary responsibility is teaching. I enjoy research, but I get paid to teach and I put that first. I try to teach college level psychology, both upper level and introductory. Sometimes I succeed and sometimes I fail.

You have heard several people mention the great range of abilities among our student population. This range of abilities is not just academic ability, but range of motivation, range of communication skills (both expressive and receptive) and many other variables.

How do you teach in a classroom where we find these wide differences in abilities? What are the important factors we should focus on? One factor which deserves special attention of course, is communication.

You heard Robbin Battison say yesterday that we have teachers who cannot communicate with students. Our initial reaction is "that's easy for you to say", but we know he's right. We do have teachers who cannot communicate with the students. He was also right when he said that the sign language evaluation left something to be desired (or words to that effect). But it is a start, it's an attempt. We are working on it.

Let me pose some researchable questions about classroom communication.

1) What is the proper method? Here at Gallaudet we use

stand. As a matter of fact, it is probably the only "signing" many of us can understand. Is it as easy for our students to understand?

2) What about fingerspelling omissions? A lot of our lectures must be spelled, and we sometimes get a little lazy. I can remember teaching developmental psychology and spelling M A I U R A T I O N. That is easy for us to understand because of our strong English language base. What about our students? Is it easy for them to understand?

3) What about extra linguistic factors? By this I mean such things as eye contact, body language, irregular movements, etc. I doubt that hearing people (or late onset deaf people) share these factors with deaf people and I think that might be very important?

4) How do teachers rate their signing ability? I have asked some, and their opinion differs sharply from that of the students! We learn best when motivated, but how can we be motivated if we think we are good?

Many of our teachers come here with a great deal of experience at regular colleges. How much teaching expertise can be transferred if they cannot communicate? How much if they can communicate? Do the same factors which make them successful at Podunk make them successful here? It would be nice to know!

There are a lot more I could list, but I can see

say one more thing.

I said that my primary responsibility was to teach. I firmly believe that, but as a marginal member of the deaf community I sometimes find myself in an awkward position. I believe that there is a deaf world, a distinct subculture, and most of our graduates will spend their social lives in that world, happily, by choice. But for 90% of them, from 9 to 5, 5 days a week, they will be in the other world, where they will have to compete nose to nose with hearing people.

It is, therefore, our responsibility to help them discover that it is their responsibility to acquire the skills which are necessary to enable them to compete on as equal a basis as possible.

Questions and Answers:

Q. I didn't know that attitude scales predict anything, any kind of behavior. Is it correct to talk about the validity of an attitude scale?

A. My point is that we are not really measuring what we intend to. The reason for this is that the respondents

Q. You said that you don't think many of the students understand lectures well. What part of the lecture don't they understand, the signing, the lip reading, the language or what?

A. Of course, it depends on the individual student, but in general, I think that the kids who learned (or better --are learning) English as a second language, operate from a different base, have a different internalized competence and therefore, fill in gaps in a different way than we do.

Q. I wonder how many of the kids are really ASL users.

A. That is something we need to find out. Probably not the majority, and for that reason ASL is probably not the appropriate classroom language, but in my opinion, we don't know exactly what the appropriate classroom language is.

Q. Wouldn't you say the reason most people go to college, or most college is for something other than study?

A. Good Q, but I think the problem is much greater here than at other colleges. Gallaudet is more than a college, it is an entire community and the students perceive themselves as not students per se, but members of the community.

John G. Schroedel, Deafness Research and Training Center,
New York University

EDITOR'S NOTE: This account was written by an outside researcher especially invited to come and observe the Symposium. He wrote down his own impressions as to what the research issues are or should be.

Understanding the deaf community and how it relates to the larger society is an important step in devising researchable questions on adjustment to deafness, as well as the communication and sociological aspects of deaf people.

1. Issue: What is the deaf community?

Discussion: The deaf community can be defined as including deaf people, their organizations, parents and professionals. The more visible forms of the deaf community are the inter-marriages between deaf adults, their local clubs and churches, as well as their state and national organizations. Less visible but as, if not, more important, is the socialization process through which a deaf child becomes a deaf adult. The influences of parents, teachers, counselors and other professionals can be pivotal in guiding the deaf child in becoming a member of society. Unfortunately, the question becomes: which society? Understanding the process of socialization helps to answer this and the next question.

2. Issue: How does the deaf community relate to the larger society?

Discussion: The premise is taken that the deaf community

[illegible]

professionals deny [illegible]

language and [illegible]

[illegible] adults [illegible]

[illegible] the [illegible]

[illegible] differ [illegible]

and non-residential [illegible]

[illegible] possibilities. [illegible]

The effect [illegible]

[illegible] such as signs [illegible] deaf [illegible]

[illegible] versus [illegible]

[illegible] research [illegible]

[illegible] hearing [illegible]

[illegible] which [illegible]

3. Issue: What are the [illegible]

[illegible] instruction of [illegible]

Discussion: [illegible] understanding [illegible]

[illegible] signs well and others cannot may be [illegible]

examining student [illegible], rather than describing their [illegible]

[illegible] group [illegible]. Attendant attitudes toward [illegible]

deaf adults and deafness may accompany these [illegible]

tions. Study of training procedures, instruction, [illegible]

program formats are also important.

4. Issue: What are the influences [illegible] the [illegible]

work motivation of deaf people?

7. Issue: Should a data bank be developed on Gallaudet alumni?

Discussion: Participation by alumni in research surveys is one of many forms of feedback open to this group of the Gallaudet community. Should such research be done more regularly and more systematically? Should such research be linked to undergraduate achievement and communication records? One advantage of such a comprehensive data bank would be the establishment of a means to evaluate educational programming at Gallaudet.

Any program would naturally prefer to bring attention to its successes rather than its failures. The Gallaudet "X factor" -- the non-graduating alumni -- deserves some consideration. It is a common problem in most colleges and universities that a high percentage of entering freshmen do not complete a degree within four years. Is the college non-graduate a dropout or pushout? While a student can fail college, it is also possible that a college can fail a student. Study of all departing students can help improve the range and quality of academic offerings and student services.

SUMMARY

A number of issues about research on the social and cultural implications of deaf people were raised and discussed. These included defining the deaf community and its relations to the larger society. The motivations of persons learning signs and the academic and work incentives of deaf persons were examined. The roles of communication in psycho-social development of the deaf

[illegible] was given attention, as was mode switching. The functions of an [illegible] bus was another issue presented.