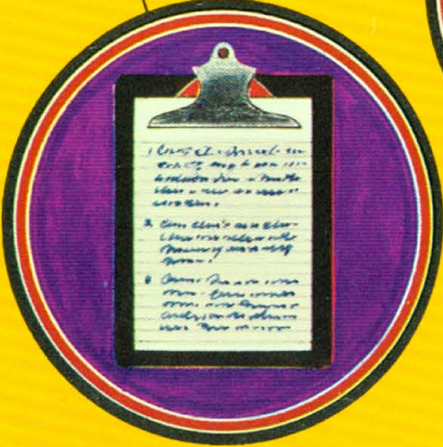


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Publication of the National Technical Institute for the Deaf

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**COMMUNICATION
CENTER**





SEEING SPEECH—Speech pathologist Charissa Rubinstein explains the Visual Speech Training Aid (VSTA) to a student. The new device shows a student's speech characteristics.

Communication Center Focuses On Student Needs for Future

When a National Technical Institute for the Deaf student graduates, communication skills will help determine successful job placement and community involvement.

Recognizing the need for good communication skills, NTID established a Communication Center to concentrate on speech, lipreading, language, use of residual hearing, and in some cases, learning or improving manual communication. All of this is accomplished through the efforts of the five areas of the Communication Center: Speech Service Section, Audiology Service Section, Interpreting Service Section, Language Service Section and Experimental Educational Theatre.

"We have learned that the ability to communicate is as important as technical and personal and social skills in determining the success of our graduates," said Dr. Robert Frisina, director of NTID.

With 50 percent of NTID students coming from residential programs and the remainder from day and public school programs, the range of communication ability is broad. The initial

task, according to Dr. Donald Johnson, director of the Center, was to develop appropriate evaluation instruments from which individual communication profiles could be developed.

"Our first objective was to define the speech and voice characteristics of the NTID student population. To accomplish this, a speech and voice diagnostic form was developed. Information gathered from the administration of the diagnostic tests defined the student needs relative to oral communication and formed the base for future curriculum development.

Individual speech evaluations for 162 incoming deaf students in the summer of 1972 revealed approximately 13 percent of the students had pitch registers grossly inappropriate for age and sex, with an associated inability to control pitch.

"This research was only one step in a process of determining the need for training in oral communication," said Dr. Joanne Subtelny, coordinator of the Speech Service Section. "The next step was the implementation of the training."

For each student, a communication program is based on defining priorities for training, length of training, and scheduling of course work within the Communication Center.

Following two quarters of therapy, NTID students' speech errors improve by 11 percent and lipreading skills have increased 15 percent overall with up to 46 percent on some individuals. All students who received therapy to correct pitch problems improved by 12 percent in intelligibility.

In addition to individual therapy, NTID students are required to take courses through the Communication Center in Introduction to Communication Skills and Effective Communication (public speaking). Depending on the individual needs of the student, courses are offered in Speech Therapy, Pronunciation, Technical Communications, Language of Idioms and Slang, Oral Communication, Conference Techniques, Basic Language of Signs, Intermediate Language of Signs, Interpersonal Communications, Oral Interpretation, Orientation to Hearing Aids, Auditory Training, Hearing Aid Check

and Repair, Speechreading Training and Communication Aids (long-distance communication devices).

A communication counselor and student design a program that will give the NTID student the communication skills needed for successful employment and community involvement. A detailed evaluation is part of each program.

"Of all the programs I took in college, none has helped me more than Conference Techniques," said Richard Potter, a 1972 graduate of the College of Business, who owns and operates a fabric store in California.

"Improving my verbal communication is helping me now," said NTID grad Jeanne Buller, who is employed as a medical record technician at the Los Angeles County, USC Medical Center. "Learning to communicate with hearing and deaf is important. I try to act every day like there is no difference between hearing and deaf. It helps people to accept me as an individual."

In addition to the above courses, an Audiology Service Section provides complete hearing evaluation. Hearing aid checks, minor repairs, and assistance in obtaining hearing aids for trial is part of the service offered. Students also are trained in how to use the telephone and other long-distance communications devices such as the TTY and Vistaphone, the picture-telephone now limited to on-campus use. There are 20 units available.

The pioneering use of Vistaphone was the result of NTID's research contacts with Stromberg-Carlson Co. of Rochester, N. Y. NTID also has cooperated with the Center for Communications Research in Rochester for the development of a speech feedback instrument, the Visual Speech Training Aid (VSTA).

The VSTA provides a visual display in the speech parameters of pitch, intensity, voiced/voicelessness, and nasality. The system records and displays a speech parameter such as pitch or intensity on a television screen as a trace or line, and can be "frozen" or permanently stored. Overlays permit comparison for student and instructor.

The usefulness of the VSTA and other Communication Center equipment is being evaluated.

"We will continue to research new methods of improving the communication abilities of our students," Dr. Johnson added. "We know that as our graduates succeed on the job, the Communication Center will have played a role in that success."



SPECIAL INSTRUCTION—Audiologist Anne Galloway explains the use of hearing aids to students in her "Orientation to Hearing Aids" class.

Speech:

NTID students indicate that individual speech therapy is the Communication Center program they enjoy most.

That, of course, is a big boost to the Speech Service Section, which constructs and implements programs designed to develop speech skills of NTID students.

Research indicates that only 45 per cent of incoming students have intelligible speech when reading a passage. Another 25 per cent are semi-intelligible and 30 per cent are not intelligible.

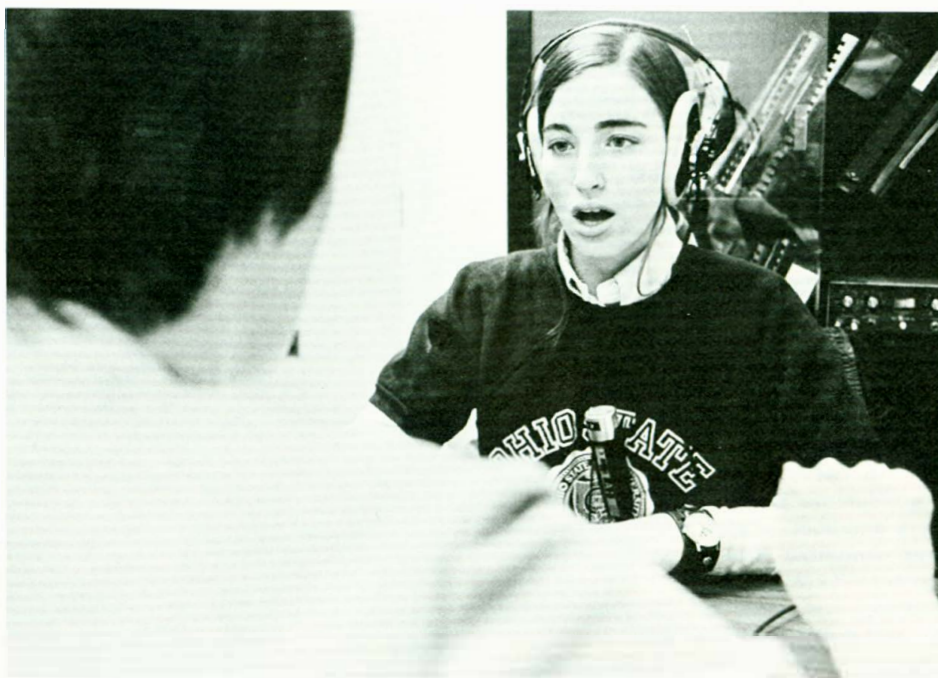
"The communication abilities of our students vary greatly," said Dr. Joanne Subtelny, coordinator of the Speech Service Section. "Some students need little support, while others require extensive individual therapy. Our therapy then is individualized to meet the needs and motivations of individuals."

Dr. Subtelny is quick to point out that NTID students vary in both their need and desire for individual therapy.

"Students with good oral skills will not need as much support as others," she remarked. "Then there are those students who have limited potential for improvement. Generally, the deaf student with some residual hearing and an outgoing personality is the most responsive and shows the greatest improvement in therapy."

The length of individual therapy depends on the motivation of the deaf student and his or her potential to benefit from the experience. There are 125 NTID students in individual therapy during any quarter. In addition to therapy, general classes are offered such as Introduction to Communication Skills, Effective Oral Communication, Idioms and Slang, and Interpersonal Communication. All instruction is designed to impact on students from a personal and career perspective.

"Our objective is to help develop the students' ability to interact with others in both personal and group settings," Dr. Subtelny added. "Many students have acceptable speech but don't use it effectively. We try to help them to gain confidence and learn to organize and present their ideas to others. It's not surprising the program is popular when the importance of communication on the job is understood by the student. Positive feedback from our graduates on-the-job is the reinforcement the staff appreciates."



SPEECH THERAPY—Individual speech therapy has proven to be effective in developing speech skills of NTID students.

Audiology:

"Increased use of residual hearing improves communication and leads to job growth," according to Dr. Donald Sims, coordinator of the Audiology Service Section.

It's not surprising then to learn that the efforts extended in this section of the Communication Center are job-oriented. Following extensive hearing evaluations, individualized programs are developed. Much of the material is closely related to the terms and sentences common to the job the student is preparing for.

At present, five courses have been established by the audiology department:

Auditory Training — The course consists of self-instructional sessions which include listening practice with frequently occurring on-the-job words and sentences. The EFL Audio Flash Card Reader, with a four-track tape system, is used to play back the flash-cards. Each card has a short job-related sentence, a key word from the sentence, and the sentence again with background noises that would be typical to that job. The last track is to record the student's own speech so that he can compare it to the sample words. After selecting a stack of 10 cards from his major (whether it be accounting, printing, medical records or machine tool, etc.) the student tries

to identify the sentences. Depending on his ability, he could then practice listening to only the key words of the sentences, or to the sentences in background noise. The self-instruction format allows this practice to proceed at the student's own rate and when he feels ready he again tests his ability to identify the sentences on the cards without any clues.

Orientation to Hearing Aids — Ten percent of NTID students come without hearing aids and many who wear them have out-dated models. This class is designed to introduce many of these students to daily use of amplification. Warranty repairs, costs and dealer services are also explored. Students can try several hearing aids on loan during the course. This enables the student and audiologist to explore what kind of hearing aid fitting is needed.

Speechreading — This course is to help students strengthen their lipreading skills to the point where they can be successful in understanding spoken messages. The course features self-instruction with taped TV lessons which allow students to practice reception of every day expressions.

Communication Aids — This course will be offered for the first time in the fall of 1974. In general, it will show NTID students how to make use of the telephone in spite of their deafness.

Instruction will cover the "how to" of regular telephones, telephones with amplification, telephones with speech code indicators, Vistaphones (TV phones), electro-writers and teletype machines. Students will have time to master the operation of whatever device is in line with their communication skills.

Hearing Aid Check and Repair — This course is designed to train students to perform hearing aid checks on precision acoustic equipment, make earmold impressions and adjustments and to complete minor hearing aid repairs. Students who complete training and qualify can work part-time to assist the audiologists.

Research interests of the Audiology Staff include studies on testing stu-

dents' ability to hear speech sounds (hearing discrimination). In one study, several different types of hearing discrimination tests were compared. It was found that generally, students did much better (+30% correct) on the sentence length test (CID Everyday Sentences) than on isolated-word type tests such as the CID W-22, and PB-K tests. This would indicate that knowledge of everyday type language does provide a deaf student with a much better idea of what is being said. We also now know that the CID Everyday Sentences Test is useful in probing NTID students' communication abilities.

Also, a study of the manner of administering speech sound discrimination tests was completed this summer.

The results of giving several tests in a group and then administering the same tests individually were compared. Little difference occurred in group vs. individual test administration. Practical application of this finding will allow group speech sound discrimination testing, thus eliminating some of the time-consuming individual test administration.

Research has also provided a standardization of findings in hearing discrimination and speech reading tests. By establishing a consistency of test interpretation, NTID audiologists can be sure that their description of a student's test results will be very similar to the student's real-life functional ability to communicate.



SELF-INSTRUCTION—A student works with the EFI Audio Flash Card Reader which enables him to listen to key words and phrases in his career area of study.

Students Assist With Hearing Aid Repairs

Expensive precision acoustical machinery entrusted to a student? Dr. Donald Sims, coordinator of the Audiology Service Section, seems to think that such a plan is a good investment. Through the Hearing Aid Check and Repair Course, offered once a year through Audiology, selected students are trained to test and repair other students' hearing aids right on campus.

"Our present student worker, Jack Keaton, is probably now more experienced than I am. He is a trusted and valued part of our audiological services area," Dr. Sims pointed out.

In addition to handling the delicate machines and evaluating the problem as either a minor one that he can handle or one that must be referred to a dealer, Jack also makes impressions for earmolds and adjusts them.

"Very often I find a problem that I'm not trained to repair, so I take the student's hearing aid and send it out. I'll loan another hearing aid to the student if we have one on hand, since it usually takes 10 to 12 days to get his own back," explained the 31-year-old Keaton.

Jack, an applied photography major in the Visual Communications Technologies program, took the one-quarter Hearing Aid Check and Repair course in the fall of 1972. Now he is working 15 hours a week, along with helping three new trainees "get the feel" of the job. He'll be graduating with a diploma in March and wants the new students to do a good job after he leaves. "A person can have a lot of knowledge up here," he said, pointing to his head, "but he still has to apply it." That's why the other three students (Stephen Weitz, Queens, N. Y.; Fred Feldman, Yonkers, N.Y.; and Robert Goy, Lombard, Ill.) spend three or four hours a week each in apprenticeship with Jack.

"One time one of my helpers was really having trouble with a testing machine. He just couldn't get on to it. Finally, I yelled, 'Look, you have to learn to love this machine!' Since then he's had no trouble at all. I guess he did learn to love that piece of metal."

Keaton, a native of Covington, Kentucky, had worked for many years at several different jobs before coming to NTID. "I was working for a paper



STUDENT TRAINEES—Jack Keaton (left) teaches other NTID students important facts about repairing and fitting hearing aids.

company in charge of the warehouse — seven years. I just couldn't improve myself, especially when my tests proved that I was losing more and more hearing each year. A friend of mine persuaded me that the photo field was a good one, so I came to NTID for training. After I graduate, we want to set up our own studio," he confidently added.

Dr. Sims claims that the Hearing

Aid Check and Repair service is vital to NTID students. "If a hearing aid doesn't work, and you're used to relying on it, it can really stop you dead in your tracks."

So Jack Keaton is looked to as a real pro in this area. "If Jack decides not to go into the photo business, he knows he'll always be able to go into the hearing aid testing business," concluded Dr. Sims with a smile.

Language:

You can call it English or language, but it's all part of communication. And interest in improving and reinforcing all methods of communication is one reason the NTID English program recently became part of the Communication Center.

To be known as the Language Service Section, the program will continue to support the development of deaf students' competence in technical communication as required for successful job placement.

"Every part of the Communication Center touches the language (English) program in some way," says Dr. Joanne Subtelny, coordinator of the Language Service Section.

"If a deaf student doesn't understand English construction and has a limited vocabulary, he will have difficulty developing oral or lipreading skills."

The first major task was to develop a system for identifying individual abilities and disabilities. An analysis of writing was part of the strategy. Curriculum will be built around individual needs.

A Language Learning Center will develop modules to supplement small group instruction and enable students to work and develop at their own pace.

What is learned through the Language Service Section will be disseminated to secondary programs "... with the hope that someday primary and secondary programs will eliminate the need for most of the language training presently required at the post-secondary level," Dr. Subtelny added. "For each student, speech, lipreading and auditory training should reinforce the focal point of training in language. The best efforts to up-grade oral, lipreading and auditory skills will meet with frustration if the English language base is faulty. In following a program of training, our job is to recognize the diverse needs of the individual and build — keeping the individual's career goals in mind."



TEAM TEACHING—W. David Hagans (left), Robert Panara (right), and Patricia Ralph team up to teach the "Introduction to Theater" course offered by the EET program.

Experimental Educational Theatre:

The development of a performing arts center has been part of the NTID plan since its initial conception. With the completion of the NTID theater and the implementation of the Experimental Educational Theater program, the plan is finally coming to life, according to David Hagans, coordinator of NTID's EET.

Besides providing NTID with an exciting physical setting for theatrical presentations of all kinds, the EET will impact on NTID as an integral part of the total program.

As a medium to encourage student self-expression, EET programs will be developed to refine and expand deaf students' oral, aural and manual communication skills, as well as encourage students to achieve a high level of personal, social and cultural development.

The major long-range goal of the Communication Center is to support NTID's effort to develop adequate technical and social skills in students by stimulating the development of each student's total communication process. The EET program will support this goal in various ways.

Classes in history of the theater, oral interpretation and dramatic classics will aid in the development of students' language and cultural skills. The production of plays within RIT and

throughout the community will supplement the cultural and entertainment needs of deaf students. Dramatic presentations will further serve to stimulate social interaction between the deaf and hearing.

"The work of the NTID Drama Club will reflect all of the goals of the EET program and will continue to provide students with experience in all phases of play production at RIT and the community at large," Robert Panara, founder and major advisor to the NTID Drama Club, said. Panara, professor of theater and drama at NTID, was instrumental in developing the initial concept of the Experimental Educational Theater program.

In technical areas, EET will encourage technical competence in the arts and crafts of the theater. Work training projects in stage craft will involve deaf students' majoring in areas such as fine and applied arts, electrical engineering, graphic arts and the applied sciences.

"We are presently researching the job potential for our students in technical theater areas. If we find that this area looks good, a program in technical theater will be implemented," Hagans said. "There are many areas within NTID that will have linkages with EET."

Many Paths Lead to Deaf Education



DR. DONALD JOHNSON
Director, NTID Communication Center

For someone so totally immersed in his job as Dr. Donald Johnson, one would guess that he had planned his career since age ten.

"But that's not at all true," claims the director of the Communication Center. "Everything of great consequence leading up to my career in audiology was a 'fluke'."

Dr. Johnson had a career in the Air Force before entering college. "I was 24 years old and didn't know what to major in. Would you believe I finally decided to go into speech education because so many people had commented that I had 'a good, resonant voice'?"

Dr. Johnson was steered into speech therapy by an instructor who was absolutely delighted to have a male interested in speech. Finally, he decided on a speech pathology major, and graduated from the University of Illinois in 1961.

Filling out another application on that same bulletin board led to a fellowship and an M. A. degree from Northwestern in 1962. Johnson received his Ph. D. from the University of Illinois in 1970.

He joined the NTID staff in 1970 and is responsible for coordinating the Communication Center services — audiology, speech, interpreting, language, and the experimental educational theatre.

Prior to joining NTID, Johnson served as research associate, assistant professor of audiology, teacher of graduate courses, and supervising audiologist at Gallaudet College in Washington, D. C. He also has had the position of audiologist in Children's Hospital, Utica, N. Y.



DR. JOANNE SUBTELNY
Coordinator, Speech and Language Services

Dr. Joanne Subtelny has always been challenged to do something significant in terms of other people.

Following 13 years of research in Rochester, N. Y., Dr. Subtelny joined the NTID staff as coordinator of speech services and professor in the Communication Center.

"I guess you could say I'm a people person," Dr. Subtelny stated. "I wanted more direct contact with people — NTID seemed to offer that opportunity. Although my personal contact with students is limited by administrative responsibilities, I am blessed with a hardworking staff that understands what we are attempting to do for deaf students and are willing to work together to move the program forward."

Dr. Subtelny is a graduate of the University of Pennsylvania (B.S.), Pennsylvania State University (M.Ed.) and Northwestern University (Ph. D.). She had been associated with the Eastman Dental Center where she was a research associate, and the State University of New York at Geneseo where she was an associate professor of speech. She has been a lecturer at Nazareth College (Rochester, N. Y.) and associated with the Monroe County Board of Cooperative Education Services.

She is a fellow of the American Speech and Hearing Association, and a member of the American Cleft Palate Association and the International Association for Dental Research.

Her husband, Dr. J. Daniel Subtelny, is professor of Dentistry at the University of Rochester and chairman of the Department of Orthodontics at the Eastman Dental Center. They have a son and a daughter.



DR. DONALD SIMS
Coordinator, Audiology Service

"I've always liked machines with flashing lights and buttons that I could push. That's what attracted me to audiology," jokes Dr. Donald Sims, coordinator of Audiology Service.

"Seriously, when I was at the University of Colorado, I took a speech pathology course quite by chance. The instructor, Dr. Rita Weiss, was very dynamic and stimulated my interest in rehabilitation. Since I knew I was also interested in the practical side of science, audiology, which combines both rehabilitation and science, became my thing."

In graduate school, Dr. Sims' interest in the deaf was sparked by Dr. Ross Stuckless, presently a member of the NTID staff, but at that time the instructor of Psycho/Social Aspects of Deafness at the University of Pittsburgh.

Sims earned his M. S. in 1964 and his Ph. D. in 1966 from that university. He has since been associated with the New Mexico School for the Deaf as an audiologist and with the University of New Mexico where he was an adjunct assistant professor of audiology. He joined the Communication Center of NTID in June, 1972.

As coordinator for his area, Dr. Sims' main responsibility is to provide for hearing test services and for training to improve hearing and speech-reading skills of the NTID students.

Dr. Sims, his wife and three children live in Rush, N.Y. "Lately, my outside activities have included putting in an upstairs bathroom. I'm becoming quite a plumber — another practical application of science?" In addition to this, Dr. Sims enjoys skiing, tennis and jogging.



JAMES STANGARONE
Coordinator, Interpreting Service

James Stangarone, coordinator of the Interpreting Service Section, didn't have to make the decision to become involved with the deaf. He is the son of deaf parents.

"Although my brother is also hearing, I was the main source of communication for my mother and father as they related to other hearing people. I learned many signs before I could speak."

But Jim did have to make the decision to go into deaf education. After receiving his B. S. from Indiana University in Pennsylvania in English and Speech, Stangarone served as a hearing therapist in a public school system for a year.

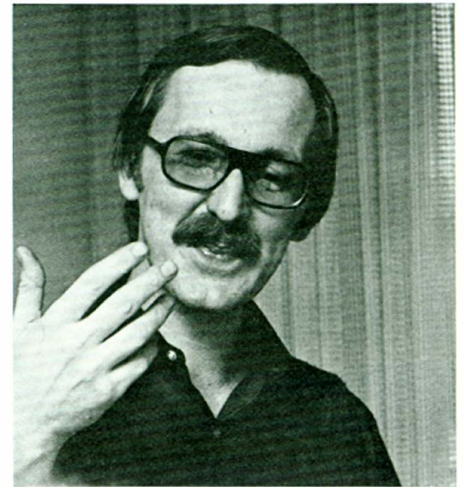
A friend in deaf education gave him the encouragement he needed, and he went back to school to earn an M.S. degree in deaf education from the University of Kansas.

Jim worked at the Illinois School for the Deaf, Illinois State University, and the California School for the Deaf at Riverside before coming to NTID in 1968.

As coordinator of his area, Jim oversees the staff of professional and student interpreters in addition to interpreting himself at professional meetings and conferences.

He is former president of the New York State chapter of the Registry of Interpreters for the Deaf and is a member of the American Instructors of the Deaf and the Professional Rehabilitation Workers with the Adult Deaf.

Stangarone, who is single, is an avid swimmer. Antique collecting is also another favorite way of enjoying his free time. The abundance of greenery in Jim's office is witness to his enthusiasm for gardening.



W. DAVID HAGANS
*Coordinator,
Experimental Educational Theater*

When talking about W. David Hagans, coordinator of the Experimental Educational Theater, it's difficult not to slip into such phrases as "all the world's a stage to him," or "the play's the thing"; but in his case they're appropriate.

For the past 15 years of his life he has been involved in the study and work of the theater. He received his bachelor's and master's degree in theater from Ohio State. He joined the faculty of Northern Michigan University as assistant professor of speech and drama and taught classes in humanities and theater at both the undergraduate and graduate level. In 1968 he took charge of Northern's Medieval and Renaissance Humanities program and a year later became the University's director of Theater.

During the summer he did everything including painting scenery, acting and directing. He acted with a number of semi-professional summer repertory theater groups, was lighting designer for Ohio State's Summer Theater, headed a summer camp theater program in Vermont, directed Ohio State's Children's Theater, and created the same school's Experimental Theater Program.

Last summer he made the rounds of theatrical events in Europe and spent a week with the National Theater of the Deaf in Waterford, Conn. He currently serves on the Board of Directors for Rochester Shakespeare Theater and on the executive board of the Arts Council of Rochester.

At NTID he's worked to see the thrust of the EET finally taking shape as well as supervising all the technical aspects of NTID's 541 seat theater.



New Equipment Complements Training

New equipment has been developed through the Communication Center staff to aid in the various types of communication skills training taking place.

HEARING AID CABINET — This cabinet was designed to effectively house all the equipment needed to check and repair hearing aids and contain hearing aids loaned out to students and those used for clinical evaluation. The cabinet has been designed to be dust-proof and organized so that all the hearing aid repair equipment is within easy reach. The work surface features a compact lathe for minor repair work.

STUDENT RESPONSE STATION — Developed for use within the audiology

evaluation program, the Student Response Station helps to assess how a student understands speech. The student listens to a tape recording of 10 words, usually having equal stress patterns. A warning light prepares the student to listen intently to the upcoming word. After each word he indicates if he knows what the word was by pressing a button situated next to that word on a panel near him.

In a room opposite the student, the testor can view a panel of buttons similar to the student's. The student's word choice lights up on the testor's side so the testor can be sure the student's response is the correct one. The response system is designed for use with more difficult series of words as

well as sentences. The Center for Communications Research (CCR), a non-profit research agency set up to apply advanced technology to the communications problems of the deaf, designed the special light panel, tape and audiometer unit.

AUDITORY TRAINING TABLE — In order to achieve the best possible fidelity and power in the audio amplification systems used in training, the Communication Center staff and CCR set up a hard-wire system, requiring that the earphones and microphones be connected directly with wires to the amplifier. Because of the tangle of wires that results, a prototype training table that would hold all of the wires and allow easy connection for

LEARNING AIDS—Speech pathologist Marilyn Nutter (left photo) conducts a language class at the prototype Speech Training Table. Students can work individually or in groups on speech training and vocabulary pertinent to their area of study. Audiologist Valerie Retzinger (right photo) tests a student at the Student Response Station. The equipment helps audiologists assess how well a student understands speech.



accessory units (TV video cassettes, film, etc.) was developed. The final prototype table features a semi-circular shape to provide six students with a clear view of each other and the instructor. Shelves were added for earphone storage under the table and the hard wire system was modified to allow group speech sound discrimination testing. A light signal was coupled with the cassette-type audio tape recorder so that students would be cued before each test. The capability of switching to either the right or left student earphone was also added.

SPEECH TRAINING TABLE — The prototype Speech Training Table has been completed and evaluated for usefulness. The semi-circular table allows up to six students to work individually or as a group on speech training and vocabulary training pertinent to their technical area of study. Each student has a headset with volume control for each ear built flush into the tabletop. The instructor works from an instructor's station. The station contains a built-in amplifier, microphone mixers and an audio-tape cassette unit and allows connections for accessory inputs such as film projectors, TV video cas-

ettes, etc. The table is semi-circular in shape allowing the instructor and students full view of each other.

COMMUNICATION AIDS CLASSROOM MODULES — The Communication Aids classroom will deal with familiarizing deaf students with the use of long distance communication aids such as the telephone, Vistaphone, teletypewriter (TTY), etc. Eight individual modules have been developed for this training. Students will get practical experience in the use of telephone and other similar devices to learn how to handle long distance calls, emergency situations and develop their listening abilities. The experiences will graduate from simulated situations to actual contact. The modules will be flexible to incorporate new devices as they are developed.

VISUAL SPEECH TRAINING AID (VSTA) — The center for Communications Research (CCR) in collaboration with members of the Communication Center has designed and fabricated a prototype VSTA. The VSTA presents speech characteristics visually on a TV screen. Its purpose is to provide visual feedback so a student can actually 'see' how well he articulates, what sounds

his vocal chords make, when he's talking too high or too low, too loud or too soft. The student's voice pattern is produced on a TV screen as he speaks into a microphone. The equipment also enables the student to see a normal speech model which he can then imitate in order to produce similar sounds.

SELF-INSTRUCTION CARRELS — In response to speech training objectives developed within the Communication Center, CCR designed special self-instruction carrels which provide independent instruction in communication skills. The advantage of this system is that the student is able to pace his own instruction rate, depending on his own needs and individual schedule. The experimental equipment weds computer generated instruction and TV tape units which allow for extended forms of movement to be used which computer assisted instruction alone can't provide. The instructor is involved in preparing the training material which utilizes a computer. Student responses are recorded and the instructor can review them for correction.

Ella Klueck Challenged By Students

Ella Klueck walked into the office of the director of the NTID Communication Center in early April, 1972, and handed him an envelope which contained her short, neatly typed resignation. She had only been working as a speech pathologist for NTID for four months and had already developed "the best case of the NTID Syndrome on record," according to Dr. Donald Johnson, director of the Communication Center.

The symptoms as she expressed them were: "not enough time to prepare for the students . . .", "difficulty in getting some of my students to understand me . . .", "not enough time with each student . . .", "the students don't practice what I teach them . . .", etc.

Each pathologist that quarter had 40 to 60 students in the classroom and individual therapy, was acting as a Communication Counselor to 40 or more students, and was working on at least three program projects.

"The other staff members and myself were all very happy with Ella's work and her ability to identify and work with the problems of deaf students. We didn't want her to leave and persuaded her to stay," Dr. Johnson said.

Since that time, many NTID students have benefitted from Mrs. Klueck's expertise in treating speech and voice problems.

She became particularly interested in working with NTID students' "pitch" problems.

Information gathered indicated that 13 per cent of the entering NTID student population had pitch registers grossly inappropriate for their age and sex, with an associated inability to control pitch.

"Once I got here and realized the number of students who had this problem, I tried to do some research on it but found very little in the way of professional literature to give me a clue as to what to do," Mrs. Klueck said. "It seemed important that these students learn to improve voice production before they could begin to work on speech."

Together with Dr. Joanne Subtelny,



PITCH EXPERT—Speech pathologist Ella Klueck finds working with NTID students' pitch problems a challenge.

coordinator of Speech Service Section, Mrs. Klueck developed a voice training program.

"The therapy procedures placed emphasis on the use of the tactile sense without neglecting the visual and auditory systems," she said. "Before therapy begins, the basic concept of voice production, pitch level, and the purpose of the training program is explained."

In a typical situation a student would begin by placing his hand on his larynx to feel the shifting of the larynx during production of high and low sounds.

By practicing certain vowel sounds the student becomes sensitized to the position and shifting of the larynx as he changes vocal pitch and eventually can feel his own pitch production without touch. During the final stages of therapy the student learns to improve the coordination of respiration-phonation, which is a prerequisite to improved speech production.

A two-quarter research project was carried out to evaluate the effectiveness of the therapy procedures. The results obtained from study of 10 NTID students revealed that all subjects achieved pitch control with no pitch breaks observed after therapy. In addition, four students achieved normal pitch and four students achieved a pitch slightly above normal. Two students made no significant improvement in pitch register. An average gain of 12 percent in speech intelligibility was associated.

Mrs. Klueck presented her information at the 1973 annual convention of

the American Speech and Hearing Association in Detroit, Michigan.

Mrs. Klueck had never worked with profoundly deaf students before joining the NTID staff in January, 1972. She feels the problem of pitch control is important to students from a social as well as a speech point of view.

"Once a student gets out on the job in the hearing world, he will present a certain image to the hearing. A 22-year old male with a very high pitched voice will obviously leave a poor impression on those he meets. Voice therapy with a profoundly deaf adult is definitely challenging. The satisfaction of successfully achieving the ultimate objective is most rewarding."

ntid focus

is published at the National Technical Institute for the Deaf at Rochester (N.Y.) Institute of Technology, One Lomb Memorial Dr., Rochester, N.Y. 14623. Editor: Jack Smith, Public Information Director, Telephone (716) 464-2332; Joan Cooley, Eileen Biser, Public Information Specialists; Barbara Wagner, Production Assistant. Photographs by John Massey, Jack Smith, John McCurley, Lynn Johnson. The materials herein were produced in the course of an agreement with the Department of Health, Education and Welfare.

Interpreting:

Helping just one student succeed makes the efforts of interpreting services worthwhile.

"There are some students who can benefit from the services of an interpreter. Our job is to help support the academic growth of these deaf students," said Jim Stangarone, coordinator of the program.

The major function of the Interpreting Service Section is to provide interpreting for deaf students who are cross-registered through NTID in one of the other RIT colleges. Deaf students attend classes with their hearing counterparts but have the added input of lectures and class discussions through total communication.

"It's a service for those deaf students who need and/or want it," Stangarone added.

More than 500 interpreting hours a week are provided in the academic setting. There are six full-time and six part-time professional interpreters, and 30 hearing students who serve as student interpreters.

Stangarone pointed out that unlike many postsecondary programs for the deaf that are in the community college settings, NTID students live on campus and the interpreters are involved in evening and weekend work, such as interpreting for clubs, organizations, personal requests, sports events, along with assistance in making local and long distance telephone calls.

Training programs have been developed for both student and community interpreters. Each summer students from RIT and persons with interest in community interpreting enter two distinctive training programs for intensive eight-week courses.

Besides refining their sign language and fingerspelling, these persons are exposed to the psychology of deafness and philosophies of deaf education.

"We are currently conducting a survey to evaluate the effectiveness of our summer programs, to see if this experience is actually proving useful to the individual involved and to the deaf they serve," added Stangarone. "Although we don't have the official results, I can tell you that at least six or seven of our former student interpreters have gone on and are now teachers of the deaf throughout the United States."

In addition to this, Interpreting Services personnel are responsible for conducting sign language classes for stu-

dents and new staff. Many of these classes occur during the summer but then continue throughout the year as new students and members of the staff join NTID.

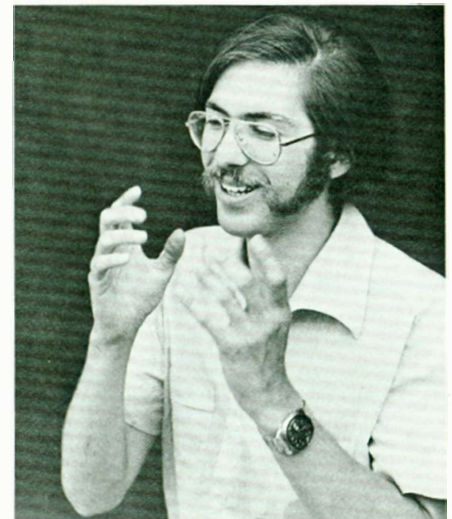
"We are the largest program in the U. S. to use interpreters, so we are very often looked upon as pacesetters for innovations in training techniques," Stangarone contributed. "We've developed a great number of films and videotapes which we use to sharpen a person's receptive skills. They've been used only with NTID, but I can foresee a general distribution once they're completely polished."

Stangarone has lead several workshops in various parts of the country which explore the areas of providing interpreting in a postsecondary situation, methods for total communication instruction, and training interpreters themselves within their own programs.

Development of a new technical-vocational sign language, a joint project with the National Association for the Deaf, is another endeavor of Interpreting Services.

The interpreting program has been certified by the national Registry for Interpreters for the Deaf; six of the professional staff are also members of this organization.

TRAINING—NTID provides programs to train interpreters who will work with students at NTID as well as serve the deaf in their local community.



NTID Grad, Potter, Successful Businessman

The sign on the front of the store reads "Richard's Fabrics." Inside is Richard Potter, explaining to a customer the wisdom of selecting one material over another.

The fact that Richard is deaf and his speech is not completely intelligible doesn't seem to bother the customer, who selects 12 yards of different fabrics. Richard is friendly, honest, and provides both good fabrics and service, and that's all that matters.

The store itself is located in Cucamonga, Calif. Yes, there really is a Cucamonga. It's located 63 miles from Los Angeles at the foot of a mountain range where the air is more smog-free and the people perhaps a little friendlier.

"The people here are friendly — like Pittsford, N. Y.," Richard recalls as he returns material to its proper racks.

Richard fondly recalls his experience in Rochester, N. Y. In 1972 he earned a bachelor's degree from the College of Business at Rochester Institute of Technology where he was enrolled through the National Technical Institute for the Deaf.

Now he owns and operates his own business, the first NTID graduate to achieve such an honor.

Following graduation from Santa Monica High School in 1966, Richard spent one-and-a-half years at Santa Monica Junior College. But officials there felt he would benefit from the support services offered through NTID, so he transferred in 1968.

Almost anyone could have predicted Richard would choose the retail program offered through the College of Business. After all, four generations of Potters have worked in the fabric business. In fact, his father (Albert)

still owns a fabric store in Van Nuys, Calif., that was started by Richard's grandfather more than 20 years ago.

Richard himself worked part-time and summers for his father. There was no other way — the fabric business was to pass to another Potter.

For the first year and a half following graduation Richard, 27, worked for his father and saved his salary. With fabrics from his father's store and his own financial backing, he opened his own shop in Cucamonga in June 1973.

"I knew the first time I saw the area that it was where I wanted to settle," Richard recalls as he drives to work. He still lives with his parents at 369 18th St. in Santa Monica, so it takes more than an hour to drive to work.

"Unlike the area around my father's store, Cucamonga has tremendous growth potential," Richard continued. "I think I'm going to enjoy watching the changes here over the years."

Outside of the fabrics that his father purchases for both stores, Richard is on his own.

"I only know that there are many decisions to be made in every day business. He must be making them be-



EXPERT ADVICE—Richard Potter (right) listens carefully to advice from his father, Albert, about fabrics. Richard is the fourth generation of Potters to enter the fabric business.

cause he's not calling me," his father said with a grin. "Sure I'm proud of him. He's grown up."

In addition to retailing, Richard feels that college "taught me how to work with people and how to be aware of the things around me. As I learn to know the needs and choices of my customers, I'll be able to have even greater input into the fabrics we buy for this store."

One of Richard's employees is Robin Billings, a student at Chaffey Junior College in Cucamonga.

"A few people have difficulty understanding his speech," Robin stated. "But he sure does know fabrics, and many people keep coming back. He must be doing something right."

The store itself is spacious and contains a complete line of yard goods, including sportswear fabrics, upholstery and drapery fabrics, awning, canvas, pillow ticking, boat drill and tablecloth material.

In order to keep the cost of help down and give the store the best chance to succeed, Richard's mother, who has worked for years in the fabric business, works in her son's store four days a week.

"If she brings in customers I'll keep her. If not, she's fired," Richard said with a wink.

"It's his store, and he sets the policy," Richard's mother responded quickly. "He's not difficult to work for. He knows the business. His training in college was good. It's gratifying to see him grow up and learn to deal with people. It's much harder to own your own business than work for someone else. Richard has to make it on his own. He gets nothing for nothing — no fringe benefits."

Richard works 10 hours a day, six days a week. On the seventh day he helps his father, who is nearing retirement age, clean up his store. It's Richard's way of helping his father cut the cost of part-time help.

All of this work, on the other hand, doesn't leave Richard much time for social life. The former college basketball manager is still crazy about sports and roots for the UCLA Bruins and L. A. Lakers.

He dates both a hearing and a deaf girl and most of his friends are hearing. But he seems to move comfortably in any setting. His sister Joan is deaf.

"At first I thought the business world would be the same as college," Richard said, "but it's different. There are pressures to succeed in business. You have to be willing to work."

"If I had to pick one college course that helped me most, it was oral communication and conference techniques. These are things you need as an employer or employee."

Richard feels he and his family believe in one thing — challenge. But someone might be willing to argue that the Potters believe strongly in something else — tradition.



MAKING DECISIONS—Richard helps a customer decide which fabric to choose. Owning his own store has helped him learn more about people and their needs, he says.

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March — April 1974