

DEVELOPMENT OF PRONUNCIATION SKILLS

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The English language, in both the written and spoken form, presents major difficulties for deaf students. The rules of grammar are difficult to learn and apply, and spellings often provide little or no clues to the pronunciation of words. To illustrate, consider the sound (*i*). That one sound may be spelled in several ways:

i-e	like	/līk/
-ie	tie	/tī/
uy	buy	/bī/
ig	sign	/sīn/
y	my	/mī/
igh	fight	/fīt/
i	hi	/hī/
ye	rye	/rī/

To aid NTID students who experience difficulties in determining correct pronunciation, it was proposed that a course be designed to develop and improve pronunciation skill. To identify students in need of training and to determine the general level of skill in pronunciation of incoming NTID students, a short screening test was administered to 103 randomly selected students. The screening test was designed to evaluate the student's functional knowledge of the diacritical symbols and his knowledge of and ability to apply common pronunciation rules. The overall mean for this sample was 41.38% correct. As would be expected, unintelligible speakers (Profiles 1 and 2) scored proportionately lower than the mean.*

TABLE 1: Means for Pronunciation Screening Test scores with students categorized by speech profile ratings of randomly selected students entering NTID summer, 1974 (N=103)

Speech Profile Rating	n	Pronunciation Score (% correct)	
V (5)	19	mean	54.32%
IV (4)	32	mean	44.25%
III (3)	28	mean	42.64%
II (2)	19	mean	29.68%
I (1)	5	mean	11.00%

*See Dr. Johnson's paper "Communication Characteristics of NTID Students," for a complete discussion of the Profile Rating System as employed at NTID.

The mean for the semi-intelligible speakers (Profile 3), was 42.64%. Speakers Profiles 4 and 5 had respective means of 44.25% and 54.32%. These data indicated that most entering students with intelligible or semi-intelligible speech can profit from training in pronunciation. The mean scores were very poor (11.00% and 29.68%) for unintelligible speakers, (Profiles 1 and 2). These scores, in addition to reduced hearing potential, indicate that these students should not be considered for enrollment in the pronunciation course.

A second method used to determine the need and content for the pronunciation course was to study performance of 76 semi-intelligible and intelligible speakers before pronunciation training. Students in this group were referred to take the course by Communication Counselors. Results of a pre-test revealed that 84% of the students scored below 70% and therefore failed to demonstrate functional knowledge of the diacritical symbols and pronunciation rules.

The knowledge of diacritical markings of incoming instructional staff was also studied. Results of a test administered to 14 new faculty members showed that none of the incoming staff members had adequate knowledge and skill in the use of the diacritical markings to assist in classroom instruction.

These three observations indicated that there was a need for a course to train pronunciation for semi-intelligible and intelligible speakers. It also indicated that some type of instructional unit was necessary to improve the skill of the teaching staff. To meet this latter need, Webdi, a computer assisted instruction course, has been developed. The course teaches *Webster's* diacritical symbols for the vowels, diphthongs and some consonants. To date results obtained on Pre-posts tests administered to teaching faculty before and after exposure to the Webdi program, indicate that it is an efficient instructional package. Broadly speaking, the Pronunciation Curriculum attempts to reinforce oral, aural, speechreading, and language skills of NTID students whose speech intelligibility is profiled 3, 4, or 5 as defined by the NTID Communication Profile system. These respective profile ratings indicate that the student is semi-intelligible or intelligible in speech. During 20 hours of class instruction, students are taught *Webster's* diacritical markings and their correct pronunciation. Through instruction and practice using diacritical symbols, the auditory, visual, and orthographic aspects of English phonemes are reinforced. Common rules of pronunciation are taught as well as the correct use of stress in words.

The Pronunciation 1 course includes 20 units; each unit notes includes a set of teacher notes and a section of handout material for students. Teacher notes include a problem statement and specific objectives for each unit, suggested preparation for the lesson, procedures for attaining the objectives including transparencies and EFI Audio Flash card materials, worksheets and assignments for the students to facilitate carry over of the skills into their academic and social situations, and suggested methods for student evaluation.

To study the possible effect of pronunciation training upon articulation and intelligibility, tape recordings of the Fischer-Logemann Test of Articulation Competence and two specially designed word lists were made before and after one quarter of pronunciation training. The two word lists each consisted of 50 words ranging from 1 to 5 syllables. Words were selected to evaluate the students functional knowledge of common rules of pronunciation and diacritical symbols. Words, which were specifically included in the pronunciation curriculum, were excluded from the lists. A few examples illustrating the basis for word selection are presented in Table 2.

TABLE 2: Word selection for pronunciation lists.

	Basis for Selection	Examples	
		List A	List B
ph	"ph" sounds like /f/	nephew /ˈnef-yü/	alphabet /ˈai-fe-bet/
wr	When a word begins with "wr", the /w/ is silent	wrath /rath/	wrench /rench/
mb	When a word ends with "mb", the /b/ is silent	numb /nəm/	thumb /thəm/
ght	When you see "ght" in a word, the "gh" is silent	eight /ät/	frighten /ˈfri-tən/
ted	When a verb ends with "t" and you add "ed", the final syllable is /td/	vaulted /ˈvöl-təd/	rented /ˈren-təd/

Each student read either List A or List B twice. In the first reading, words were written in diacritical symbols and were presented randomly on 3 x 5 cards at 5 second intervals for recording. For the 2nd reading, the same words were presented orthographically.

Two speech pathologists experienced in diacritical transcription independently audited each word list. If the word was understood, it was written orthographically. If the word was not understood, the utterance was transcribed in diacritical symbols. The responses of the two listeners were averaged to yield percentages of error.

Before training, students averaged 67.86% (sd=20.83) error when words were presented orthographically. When words were written in diacritical symbols, the percent error was slightly higher (mean=70.26%, sd=16.94). After 10 weeks of instruction of approximately 20 hours, percentage of error averaged 53.43% (sd=23.23) for orthographic presentation and 52.57% (sd=22.90) diacritical presentation. For both presentations, a significant reduction in error was observed as a result of the training. The reduction in error for orthographic and diacritical presentations were 14% and 18% respectively. The associated t's of 9.547 and 6.986 are significant beyond the .01 level. These results are presented graphically in Figure 1.

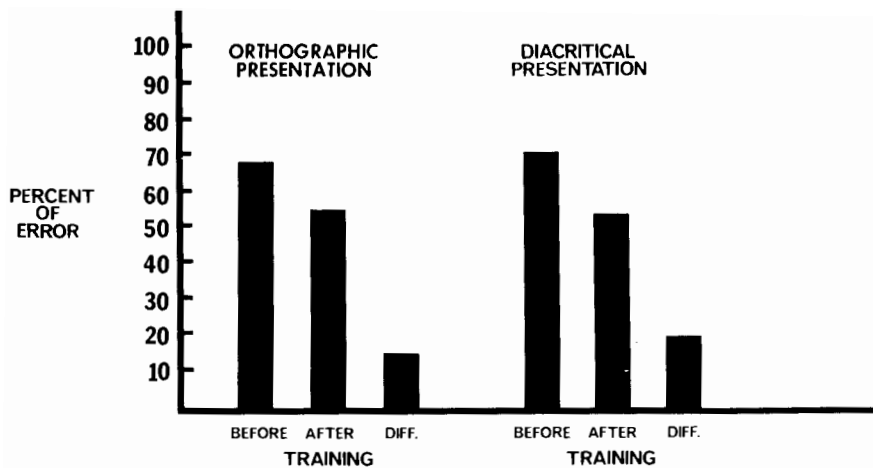


Figure 1. Means graphed for percentages of error in reading words presented orthographically and in diacritical symbols, before and after training in pronunciation (N= 21 students)

In further study of these results, correlations were run between hearing (speech) discrimination and reduction of error to determine if discrimination affected the relative degree of improvement attained. Discrimination scores (CID Everyday Sentences) for the group averaged 27%. Eight students had 0% discrimination. The correlation between improvement and hearing discrimination was not significant.

Each pre and post tape recording of the Fisher-Logemann Articulation Test was analyzed independently by two speech pathologists using conventional phonetic analysis to derive averaged percent error. Since the overall mean for pre and post test results was almost the same, it is concluded that there was no positive effect of pronunciation training on articulation scores. The results do indicate that pronunciation training definitely does improve intelligibility in reading from orthographic and diacritical presentations. Analysis of post tests of students who have been enrolled in the Pronunciation course indicates that the objectives of the course are achieved in most instances. It is apparent, therefore, that the pronunciation course, as it is presently defined, is effective and should continue to be offered.