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## **REPORT OF AN EXPERIMENTAL PROGRAM OF VOCATIONAL EDUCATION FOR THE DEAF IN JUNIOR AND COMMUNITY COLLEGE**

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The Delgado Academic and Vocational Education Program for the Deaf has now completed its fifth year. From a research and demonstration program aimed at how deaf students could best be trained with hearing students in a junior college, it has moved to becoming an established part of the life of Delgado. A description of the program itself and what it has accomplished has been presented at previous NRA meetings.

This report provides final data from the research aspects of the project. It includes characteristics on the kind of students who entered the program, the variables that influenced their progress within the program and data on the outcome of the training as measured by responses of students in answer to a mailed questionnaire. Also covered are variables which were used as predictors of success and the influence of these on outcome.

Data is based on the 202 students who entered the program during the nine semesters covered by this report. These represent about 60% of the 333 students who applied to the program. Eighty-six students, or about 25% who applied, were accepted but did not enter because they went into another program, obtained employment, were married, or were prevented by some personal reason for entering the program. That almost half of the students who were rejected were kept out of the program for academic reasons (even though this program was a preparatory one aimed at helping the student get ready for college) appears to indicate the need for better academic preparations by schools for the deaf. (Three out of four students accepted for the program had been in residential schools for the deaf prior to their application to Delgado.)

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Reason for rejections are shown below:

**TABLE 1**

<b>Reason For Rejection of Applicants</b>		
	<b>No.</b>	<b>%</b>
Academic	22	49
Social	05	11
Both	03	07
Other	10	22
No Information	05	11
<b>Total</b>	<b>45</b>	<b>100</b>

**CHARACTERISTICS OF STUDENTS  
AT OR SHORTLY AFTER ADMISSION**

The typical student who applied to the program was 20 years of age (25%) was most likely to have given an address in Region VII of the HEW (39%) from Arkansas, Louisiana, New Mexico, Oklahoma and Texas; white (82%); Protestant (50%); had been in a residential school prior to applying to Delgado (73%); had a manual communications background (70%); had pre-lingual deafness (73%); had an academic diploma (46%); had no or only unskilled work experience (35%); was rated as "poor" in speech understandability by the interpreter (28%); had a hearing loss of 90-110 decibels (51%). Only 10% of the students had some other disability than deafness.

The deafness of the student is shown by the finding that approximately 80% of the students had a range of hearing loss from 70 to 130 decibels and that this was quite similar for both the right and left ear.

Based on the various states from which applicants came, it would appear that findings of this study could be generalized to the population of the United States. Some students came from every HEW region except Region VIII (including Colorado, Iowa, Montana, Utah, and Wyoming). Students were slightly older than the usual age for entering junior college but all but one were under 27.

About three out of four students had been in their residential type school prior to applying to Delgado, had only a manual background, and had suffered prelingual deafness. (Prelingual deafness refers to hearing loss at birth or prior to the time speech would have developed.)

The educational background of the student is difficult to interpret since there is little standardization among schools for the deaf regarding what is meant by academic or vocational diploma. About half of the students claimed an academic diploma and about one third a vocational one.

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<b>Previous Type of School of Applicants</b>		
	<b>No.</b>	<b>%</b>
Day	66	20
Residential	243	73
No Information	24	07
<b>Total</b>	<b>333</b>	<b>100</b>

**TABLE 3**

<b>Communication Background of Applicant*</b>		
	<b>No.</b>	<b>%</b>
Oral	51	15
Manual	232	70
None	0	0
No Information	50	15
<b>Total</b>	<b>333</b>	<b>100</b>

\*Oral or manual refers to the primary type of communication at the time of application.

**TABLE 4**

<b>Time of Onset of Deafness of Applicants</b>		
	<b>No.</b>	<b>%</b>
Prelingual deafness	245	73
Postlingual deafness	33	10
No Information	55	17
<b>Total</b>	<b>333</b>	<b>100</b>

Students were about equally divided whether they have had work experience or not but those who had worked had done so largely in unskilled jobs.

The distribution of WAIS scores was not unlike that of the population in general, and one can thus infer that the intelligence of the group is probably not significantly different from the average junior college student.

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**TABLE 5**

**Range of WAIS Scores of Students Entering The Program**

	Number of Students	%
70 - 89	15	7
90 - 109	77	37
110 - 129	64	32
130 - 149	9	04
No Information	37	20
<b>Total</b>	<b>202</b>	<b>100</b>

**VARIABLES RELATED TO PROGRESS IN THE PROGRAM**

**Vocational Progress**

Data from test scores on the CAT or SAT obtained from students shortly after their entrance into the preparatory semester (pre-test) and again at the end of preparatory semester (post-test) provided the most objective measures of student progress in the program.

For the four groups who took the CAT, an increase in scores on eight out of ten variables measured by the test was found.

**TABLE 6**

**California Achievement Test Junior High Level, Forms W, X  
Mean Scores of Applicants**

**Group I through IV  
(Entering Program Fall, 1968—Spring, 1970)**

Name of Test	Pretest (N=74)		Posttest (N=54-65)		
	Means	Standard Deviat.	Means	Standard Deviat.	
Vocabulary	6.5	1.5	5.7	2.9	N=65
Comp.	7.6	1.2	6.8	3.2	N=65
Reading	7.2	1.2	7.5	1.5	N=55
Reason. Arith.	8.2	1.4	9.2	1.3	N=54
Fund. Arith.	8.8	1.6	10.0	1.7	N=54
Total Math	8.6	1.4	9.6	1.4	N=54
Mechan. of English	8.8	1.2	9.1	0.9	N=54
Spelling	9.2	1.8	9.9	1.7	N=54
Total Language	8.8	1.1	9.3	0.9	N=54
Total Battery	8.3	1.0	8.9	0.9	N=54

For the five groups who took the SAT, changes were less obvious. Though three scores were higher, four scores were lower.

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**TABLE 7****Stanford Achievement Test Intermediate Level I, Forms W, X**
**Groups V through IX  
(Entering Program Fall, 1970–Fall, 1972)**

Name of Test	Pretest		Posttest (N=90-78)		N
	Means	Deviat.	Means	Standard Deviat.	
Word Meaning	4.4	1.0	3.7	1.7	N=90
Paragraph Meaning	4.3	1.2	3.9	1.8	N=79
Spelling	7.0	1.6	6.9	1.7	N=79
Word Study Skills	3.2	1.3	3.1	1.2	N=79
Language	4.9	1.7	5.0	1.5	N=79
Arith. Computation	6.8	1.7	7.1	1.6	N=79
Arith. Concepts	5.6	1.3	5.8	1.3	N=79
Arith. Application	5.4	1.5	5.1	1.6	N=79
Social Studies	5.7	1.4	5.2	1.3	N=78
Science	4.6	1.3	4.6	1.2	N=78

The difference in test scores may have been due to the fact that these tests measured at different levels.

**Vocational Choice:**

Counseling and progress during the program appear to result in more realistic job plans for most students.

**TABLE 8**
**Comparison of Vocational Interests Shown By Students  
Prior To Program Entrance With Program Of Studies  
Actually Entered At The End Of The Preparatory Semester**

	Interest		Students Entered	
	Before Entering Number	%	After Preparatory Semester Number	%
No Indication	25	12.4	0	0
Allied Health	5	2.5	6	3.0
Business	73	36.1	51	25.2
Education & Public Service	0	0	3	1.5
English and Ind. Tech.	51	25.2	28	13.9
General Studies	8	4.0	4	2.0
Vocational Trades	40	19.8	51	25.2
Other	N/A		59	29.2
Total	202	100.0	202	100.0

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**VARIABLES RELATED TO OUTCOME**

Out of the 202 students served, 55 completed their objectives, were transferred, were referred to other facilities or recommended for on-the-job training some time after their entrance into Delgado. Of the remaining 147 students, 42 received an associate degree, diploma, or certificate; 52 were terminated or terminated themselves because of adjustment problems; nine were married and 44 remained in training. Particular concern was paid to determining the types of adjustment problems encountered by the 52 students terminated. The most frequent reason for termination according to Table 9 was "educational adjustment" which was the student's inability to attend classes regularly, complete assignments, develop good study habits, manage his time wisely, seek tutoring when necessary, cooperate with staff, or follow rules and regulations. A student could terminate himself because of his inability to cope primarily with any or all of these factors.

**TABLE 9**

**Termination Variables of Applicants Who Attended  
Delgado Junior College**

	<b>No.</b>	<b>%</b>
Educational Adjustment	16	30.8
Community Adjustment	14	26.9
Academic Limitations	11	21.1
Financial Difficulties	3	5.8
Other	8	15.4
<b>Total</b>	<b>52</b>	<b>100.0</b>

**Follow-up Data:**

Forty-nine students provided usable data on their status after leaving Delgado by completing a follow-up questionnaire. This represented 37 percent of responses from the 101 students who were sent this instrument.

About seven out of ten students were working either full or part time and two out three were working full time.

Though trades and business were most frequently mentioned, graduates were working in a large number of different fields. Examples of positions in which graduates reported working at were: purchasing order clerk, sorter clerk, bookkeeper, postal clerk, accounting, key punch operator, typist, bank clerk, apartment manager, computer programmer, wireman, paint and body worker, welder, carpenter's helper, forklift operator, plumber, cement finisher, press room helper, architect, actor, commercial artist, prosthetics-orthotics repairman, chef, and draftsman.

Some graduates were studying for such endeavors as the ministry,

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petroleum engineering, liberal arts, data processing, and math and science education.

The range of earnings was wide: from less than \$3,000 to more than \$10,000 a year. Three out of four students considered their present situation as other than a dead end. Some evidence of their adjustment can be seen in the response of 85 percent having more than three friends who were not deaf.

### **Success in Predictions:**

The four variables considered best possible constant measures of success were the total post-test scores on the CAT and SAT, the status on follow-up, whether the client was working or not, the relation of work done to studies at Delgado Junior College and the amount earned by those who were working.

In general the potential predictor variables had weak relationships to measures of success. This finding appears partly related to distribution of students on the variables studied and partly to the way the program operated where individual attention was given to each student thus tending to overcome and nullify individual differences and provide to all nearly equal opportunities for success.

Whether the student's deafness was prelingual or postlingual appeared to have very little effect on his test scores within the program or his success after graduation. Relationships were influenced by the fact that less than 20 percent of the sample had postlingual deafness.

The student's ability to communicate orally or manually apparently has little influence on either his test scores during the program or success afterward. Part of this lack of relationship was probably due to the finding that only one out of four students had an oral background.

Relationships with employment status and relation of work to Delgado Junior College studies were not computed because of the size of the sample, but inspection showed no or very weak relationships.

The extent of hearing loss in the right and left ear correlated slightly with the test scores and WAIS scores, but no meaningful relationships were found with the follow-up data due to the small number of persons on whom data was available.

In general these findings appear to show that the selection and training process used by Delgado where each student's background and individual record were studied in a staff group meeting and decisions made on an individual basis was the best method of selection for this program. Further, the prediction from various variables studied, while not appearing useful in this project because of the individual attention given the student, should be studied further as the program continues to become an integral part of the rehabilitation process at Delgado. As more information is obtained about the kind of students in the program, this will be shared with others for their reactions and suggestions.