

JADARA

Volume 22 | Number 1

Article 6

November 2019

The Effect of Postsecondary Education on the Occupational Attainments of Deaf Adults

William A. Welsh

Office of Postsecondary Career Studies and Institutional Research, National Technical Institute for the Deaf, Rochester, New York

Gerard G. Walter

Follow this and additional works at: <https://repository.wcsu.edu/jadara>

Recommended Citation

Welsh, W. A., & Walter, G. G. (2019). The Effect of Postsecondary Education on the Occupational Attainments of Deaf Adults. *JADARA*, 22(1). Retrieved from <https://repository.wcsu.edu/jadara/vol22/iss1/6>

THE EFFECT OF POSTSECONDARY EDUCATION ON THE OCCUPATIONAL ATTAINMENTS OF DEAF ADULTS

William A. Welsh and Gerard G. Walter
Office of Postsecondary Career Studies and Institutional Research
National Technical Institute for the Deaf
at Rochester Institute of Technology
Rochester, New York 14623

Abstract

The purpose of this research is to examine the effects of postsecondary education on the professional lives of deaf adults. In order to measure this, we examined the work force attainments of three groups: (1) persons with no college degree; (2) persons with sub-Baccalaureate degrees; and (3) persons with Bachelor degrees. They were compared on: (1) unemployment rate; (2) socioeconomic status, as measured by occupation, earnings, and Duncan SEI score; and (3) vertical mobility, as measured by changes in the Duncan SEI over time.

The positive effect of postsecondary technical training on the professional lives of deaf adults is indisputable. Deaf adults with degrees fare much better in the work force than do deaf high school graduates in a number of ways. Second, their socioeconomic status is affected positively in several ways. Third, they earn significantly higher wages over the course of a lifetime. Degree attainment clearly affects deaf people in many significant, positive ways. There exists substantial evidence of the need for postsecondary programs for deaf people.

Introduction

Historically, deaf people have lagged behind their hearing counterparts in most major measures of work achievement. Studies throughout the century (Best, 1914, 1943; Martens, 1937; Lunde & Bigman, 1959; Weinrich, 1972; Schein & Delk, 1974; MacLeod-Gallinger, 1986) have shown that deaf persons are heavily overrepresented in less prestigious blue collar occupations and typically earn substantially less than hearing workers. Additionally, Schroedel (1976) has noted that deaf workers experienced more restricted occupational mobility during a period of time (1920-1970) in which a great many Americans were upwardly mobile. Has this difference been due to the handicapping effects of

deafness itself or to a relative paucity of educational opportunities accessible to deaf people?

Prior to the 1950's, the small number of deaf college graduates (the result of limited educational opportunities) made it difficult to address the question of the effect of education on the work force attainments of deaf people. However, primarily because of federal legislation and changes in societal attitudes, the last thirty-five years have seen a rapidly escalating enrollment of deaf persons in colleges, from 250 in 1950 to more than 8,000 in 1985 (Rawlings and King, 1986). The resulting increase in the number of graduates makes it possible to study the degree-career relationship for deaf people more closely.

The relationship is well known with regard to the general population (Jencks et al, 1977; Mincer, 1975; Bowen, 1977; Taubman and Wales, 1974; Young, 1984). Typically, higher education results in graduates having less difficulty in a number of areas: finding employment; obtaining a more satisfying, safer, more secure occupation; earning more money; and attaining a higher socioeconomic status. However, the extent of the degree-career relationship for deaf people has been largely undocumented until recently (Welsh and Walter, 1986).

Recent research (Schroedel, 1976; Welsh and Schroedel, 1982; Rawlings, et al, 1984; MacLeod-Gallinger, 1986; Welsh, 1986; Welsh and Walter, 1986) has provided substantial evidence that college education is beneficial for deaf people. There is little known, however, about the connection between different levels of college education (i.e., different college degrees) and attainments in the work place. The purpose of this paper is to determine the strength of that connection by determining relationships between educational level and: (1) employment status; (2) socioeconomic status; and (3) upward mobility.

THE EFFECT OF POSTSECONDARY EDUCATION ON THE OCCUPATIONAL ATTAINMENTS OF DEAF ADULTS

Methods

In order to determine the impact of degree attainment, it was necessary to compare the performance of college graduates with that of persons not holding any college degree. Degree recipients are graduates of the National Technical Institute for the Deaf at the Rochester Institute of Technology (NTID at RIT) and were grouped into two categories: (1) Sub-Bachelor degrees (Diploma and Associate degrees); and (2) Bachelor degrees. Persons not holding college degrees form a third category and are alumni of twenty-seven schools for the deaf participating in the *Secondary School Graduate Follow-Up Program for the Deaf* (MacLeod-Gallinger, 1986).

The three groups were compared on the following variables:

- (1) **Unemployment Rate:** The percentage of persons in the labor force who have neither full-time nor part-time employment (the standard definition used by the U.S. Bureau of Labor Statistics).
- (2) **Socioeconomic Status:** A term that has been operationally defined in many different ways, but is here defined as consisting of the following:
 - (a) **Occupation:** U.S. Bureau of the Census one-digit classification system (U.S. Bureau of the Census, 1982). The broad groupings are: (1) Managerial/Professional; (2) Technical/Sales/Administrative Support; (3) Service; (4) Farming, Forestry, and Fishing; (5) Precision Production, Craft, & Repair; and (6) Operators, Fabricators, & Laborers. Although the Census no longer makes formal distinctions between white collar and blue collar workers, nearly all occupations traditionally considered white collar are in the first two groupings listed above. Because of relatively small numbers of persons in groups (3) and (4) above, they are combined into an "Other" category in subsequent tables.
 - (b) **Earnings:** Both reported gross weekly and projected lifetime earnings. Higher earnings are assumed herein to be reflective of greater occupational attainment.
 - (c) **Duncan Socioeconomic Index (SEI):** (Duncan, 1961; Stevens and Cho, 1985): Via the Duncan SEI, occupations are assigned a score between 1 and 100¹.

Scores are a weighted combination of three factors: the amount of education required to enter an occupation; the wages associated with that occupation; and selected prestige measures (see Featherman and Stevens, 1982).

- (3) **Vertical Mobility:** Defined as changes over time in the Duncan SEI.

Data Sources

Data for this study were derived from two different sources:

- (1) Data for college graduates were derived from responses to the 1982-1986 versions of the NTID Alumni Feedback Questionnaire (AFQ)² (Welsh, 1986). Data were collected via this instrument on the employment status, occupation, and earnings of responding³ deaf RIT graduates. Respondents had, as of 1986, been in the work force between one and seventeen years and had an average age of 29.9 years.
- (2) Data for persons without college degrees were derived from responses from the 1982-1986 versions of the Secondary School Graduate Follow-up Program for the Deaf (SSFP) (MacLeod-Gallinger, 1986). This survey yielded data comparable to AFQ data for graduates⁴ of twenty-seven U.S. high schools for the deaf. The subset of respondents chosen for this analysis had no college degree. They had been in the work force between five and twenty years and had an average age of 29.4 years.

Results

Unemployment

The work ethic has always been an extremely important part of the American system of values (Rosen, 1959; Hyman, 1966). The concept of work has long been tied, in one form or another, to our achievement motivation, moral orientation, interests in freedom and equality, and to our concerns about personal and national progress (Salomone and Gould, 1974). The quality of our work is a powerful determinant of the quality of our lives. Small wonder, then, that the opportunity to work is so highly valued by so many people. Surely, this is equally true for deaf people. To what extent will additional education improve their employment prospects?

A comparison of the 1986 unemployment rate by degree attainment is shown in Table 1.

THE EFFECT OF POSTSECONDARY EDUCATION ON THE OCCUPATIONAL ATTAINMENTS OF DEAF ADULTS

TABLE 1

1986 Unemployment Rates of Deaf High School Graduates and Deaf College Alumni

Group	Unemployment Rate (%)
No College Degree	23.9
RIT Sub-Bachelor Graduates	8.9
RIT Bachelor Degree Recipients	2.4

Data show quite clearly that a degree makes a substantial difference in the employment prospects of deaf adults, and that a higher level degree makes more of a difference. Compared with a high school diploma, a sub-Bachelor degree reduces the likelihood of unemployment by more than 60 percent; holding a Bachelor degree reduces this figure by a rather astonishing 90 percent. A college degree obviously makes it easier to find and hold a job.

Socioeconomic Status

Education has been shown to have a signifi-

not available to many high school graduates. Those persons with sub-Bachelor degrees are employed more than three times as often in Managerial/Professional occupations (engineers, artists, teachers, administrators) as are high school graduates. Those holding Bachelor degrees are more than ten times as likely to be employed in these professions as are persons without college degrees.

Earnings. Human capital theory (Mincer, 1975; Becker, 1964) posits that, by investing time and effort (typically in formal education), one can significantly improve future earnings.

TABLE 2

Occupations of Deaf High School Graduates and Deaf College Alumni

Occupational Level	Percent of Graduates In Occupation		
	No Degree	Sub-Bachelor	Bachelor
Managerial/Professional	6.4	19.4	66.7
Technical, Sales & Admin. Support	35.5	58.4	27.8
Precision Production, Craft, & Repair	9.1	6.7	0.0
Operators, Fabricators & Labor	30.9	13.2	1.9
Other	18.1	2.3	3.6

cant effect on socioeconomic status (Jencks et al, 1977; Bowen, 1977), although it is often difficult to compare studies directly because of the many different methods used to define socioeconomic status. In this study, we have chosen to employ occupation, earnings, and Duncan SEI score.

Occupation. The work ethic places value not only on the opportunity to work, but also on the chance to succeed in a meaningful career. To what extent does a college degree open additional career paths? Data in Table 2 show the kinds of jobs people with high school diplomas and college degrees are able to obtain.

A college degree obviously opens career options

While the authors make no claim that higher wages are the only, or even perhaps the principal, outcome of higher education, it is well known that many who pursue higher education do so in simultaneous pursuit of a substantial income. To what extent will additional education mean additional income for deaf adults? Earnings data are shown in Table 3.

Data show quite clearly that salaries are augmented by college degrees. Graduates with sub-Bachelor degrees earn approximately 47 percent more than high school graduates. Salaries of Bachelor degree recipients average more than twice as much as those of persons with lower

**THE EFFECT OF POSTSECONDARY EDUCATION
ON THE OCCUPATIONAL ATTAINMENTS OF DEAF ADULTS**

TABLE 3

**1986 Weekly Earnings of Deaf High School Graduates
and Deaf College Alumni**

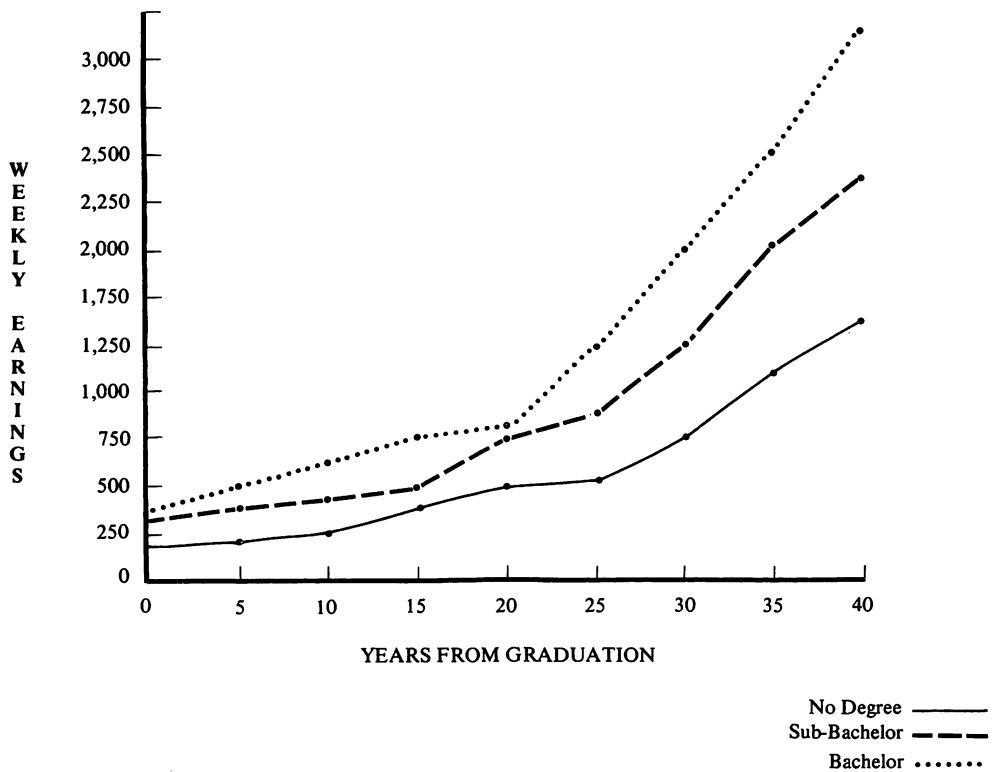
Group	Weekly Earnings	
	Mean	Std. Deviation
No College Degree	\$230	\$168
Sub-Bachelor Recipients	\$339	\$131
Bachelor Recipients	\$496	\$218

level degrees.

The earnings advantage derived from a college degree becomes magnified over a lifetime. Weekly earnings over a period of forty years were projected beyond actual available data⁵ using income data from both surveys and an average annual growth rate of 5.2 percent (Federal Old-Age and Disability Insurance Trust Funds, 1986). Results are shown in Figure 1. It is immediately apparent that differences in earnings by degree are magnified greatly over time.

Duncan SEI Score. The Duncan score is perhaps the best single index of socioeconomic status employed here, as its scale of 1 to 100 is a composite of education required for entry into an occupation, earnings in that occupational area, and prestige ratings associated with the career area. The SEI has been useful in describing educational and occupational attainment (Featherman and Hauser, 1976, 1978; Blau and Duncan, 1967; Stevens and Cho, 1985). Stevens and Cho (1985) also note that the SEI "has also been

Figure 1. Projected lifetime earnings of deaf workers by degree attained.



THE EFFECT OF POSTSECONDARY EDUCATION ON THE OCCUPATIONAL ATTAINMENTS OF DEAF ADULTS

TABLE 4

SEI Scores of High School Graduates and Recipients of Various Degrees

Group	SEI Score	
	Mean	Std. Deviation
No College Degree	27.1	15.0
Sub-Bachelor Graduates	38.9	14.7
Bachelor Recipients	59.9	17.2

widely used as a summary measure of persons' backgrounds or current occupational statuses in the study of [a variety of] social processes . . . (p. 143)"

Mean Duncan SEI scores of high school and college graduates are shown in Table 4.

Data show indisputably that, for deaf adults, college training has a significant effect on socioeconomic status. The more education received, the higher the SEI score. The average SEI of persons without degrees (27.1), is about the score assigned to sheet metal workers, dental assistants, and duplicating machine operators. The SEI for sub-Bachelor graduates (38.9) is roughly equivalent to the score for computer operators, biological technicians, and persons in some sales positions. That of Bachelor graduates (59.9) is approximately the same as physical therapists, kindergarten teachers, and personnel managers.

Vertical Mobility

One of our most cherished ideas as a free society is the concept that people are masters of their own destiny. Highly valued are the opportunities to go where we will, to pursue our own career ambitions, and to be successful if we are diligent in our work.

Closely connected with the notion of control of our own careers is the concept of occupational mobility. To have occupational mobility is to be able to select the type of work one will do and also to have some choice as to the employer for whom one will work. Greater opportunities in this area mean, perhaps most importantly of all, the chance to advance. Occupational mobility is tied inextricably to vertical mobility.

For purposes of this study, vertical mobility is defined as changes in the Duncan SEI score over time (in this study, fifteen years for college graduates and twenty years for those without degrees).⁶ SEI scores were regressed on number

of years since graduation. Regression lines are shown in Figure 2.

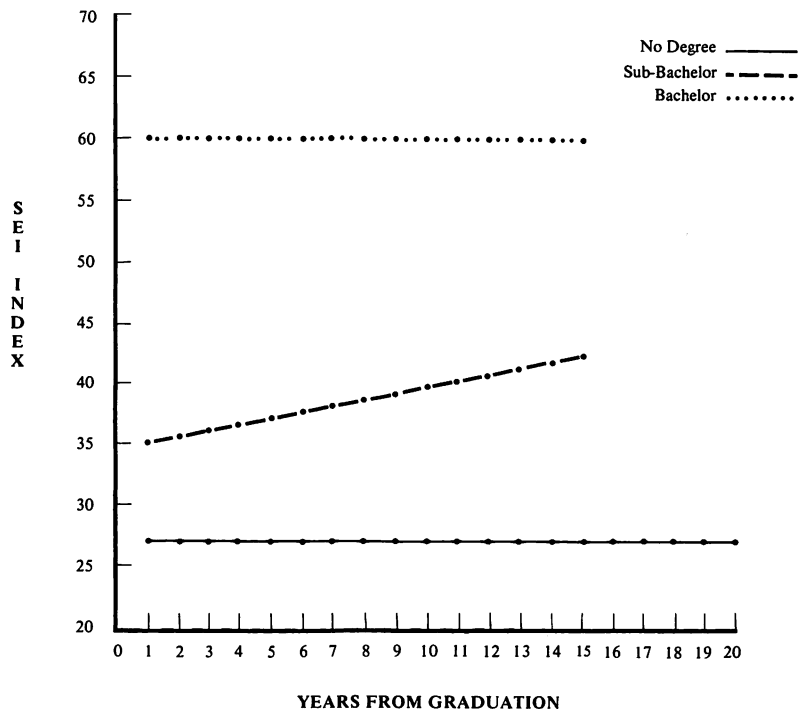
These data show an almost stunning lack of vertical mobility on the part of high school graduates or the recipients of Bachelor degrees. There is modest upward movement at the sub-Bachelor level, however. Although anything we say at this point must be regarded as speculation, it seems likely that reasons involve some combination of the abilities of the people and the characteristics of their jobs. Those without college degrees are, almost by definition, less able than college graduates in skills considered essential for most white collar jobs (e.g., reading, writing, mathematics). Additionally, the career ladders of the types of occupations they enter most often (unskilled labor, e.g., printer, assembler, machinist) are either short or non-existent. While these jobs may be secure and involve some wage increases (such jobs are most often unionized), they are seldom conducive to upward movement.

SEI scores of persons with sub-Bachelor degrees do move up an average of about eight points over fifteen years. These graduates are more able in terms of basic skills than those without degrees, and they pursue additional education much more than their Baccalaureate counterparts (Welsh, 1985). They also move into occupational areas with career ladders. A junior computer programmer can move to programmer and then to systems analyst, for example; a drafter can become an engineer; a medical laboratory technician can advance to medical laboratory technologist. At no point do the scores of this group approach the scores of Bachelor degree recipients, but they do show measurable SEI gains.

In the case of Bachelor degree recipients, the problem is not basic skills; their reading, writing, and mathematics skills are all superior to those of sub-Bachelor graduates (Walter and Welsh,

THE EFFECT OF POSTSECONDARY EDUCATION ON THE OCCUPATIONAL ATTAINMENTS OF DEAF ADULTS

Figure 2. Mobility of deaf workers by degree attained.



1986). It may be that difficulties in receipt of incidental information make it harder to keep current professionally at higher occupational levels (Foster, 1986). Also, it is likely that they begin their careers nearer to the ceiling of their occupational potential than do sub-Bachelor graduates. A significant majority of them enter professional occupations (e.g., engineers, teachers, accountants) (Welsh, 1986), and most often the positions above theirs on the career ladder are management positions. Relatively few deaf college graduates have moved into management positions (Welsh, 1986), perhaps because management positions place excessive demands on communication skills that are limited by deafness itself.

Conclusions

Limitations

It must be kept in mind that the college graduates studied are all from one institution, NTID at RIT. They may not be representative of all deaf college graduates. Likewise, high school graduates studied are nearly all graduates of schools for the deaf and may not be representative of all deaf

high school graduates.

It should also be noted that there are measures of work force success that were not included in the current study. Success is a multidimensional concept. For some, it is measured by income; for others, security; for still others, the capacity to take pride in the job itself. There are specifics that could be examined: satisfaction with supervisor and co-workers; opportunities for additional training and advancement; the list is long, and many important elements of work force success are not included here. Given these limitations, this report must be regarded as descriptive, rather than evaluative. It would be premature to use this report to evaluate high school or college training. Evaluations should be comprehensive, and more evidence needs to be collected before we can generalize with confidence.

Summary of Findings

Limitations notwithstanding, the positive effect of postsecondary technical training on the professional lives of deaf adults is indisputable. Deaf adults with degrees fare much better in the work force than do deaf high school

THE EFFECT OF POSTSECONDARY EDUCATION ON THE OCCUPATIONAL ATTAINMENTS OF DEAF ADULTS

graduates in a number of ways.

First, their unemployment rates are substantially lower. Compared to high school graduates, those with sub-Bachelor degrees reduce their rate by more than 60 percent, and holders of Bachelor degrees reduce their rate by nearly 90 percent. Deaf college graduates clearly find employment more easily than do non-graduates.

Second, their socioeconomic status is affected positively in several ways. First of all, the jobs they find are significantly different. They are employed much more often in Managerial/Professional occupations. A sub-Baccalaureate degree increases the probability of this type of employment by a factor of three: a Bachelor degree increases it by a factor of ten. Obviously, deaf people increase their employment in white collar careers as they attain higher degrees.

Third, they earn significantly higher wages over the course of a lifetime. Sub-Bachelor graduates increase their weekly wages by 47 percent over those of high school graduates; Bachelor degree recipients increase theirs by a dramatic 116 percent. Finally, and closely connected with occupation and earnings, their Duncan socioeconomic index rating typically rises directly with educational attainment.

One important area in which a degree appeared not to make as much difference is in upward

mobility. Deaf adults without college degrees, and those with Bachelor degrees did show some gains over a fifteen-year period. It may be that persons without degrees are notably lacking in basic skills that are apparently better developed in persons having sub-Bachelor degrees. In addition, those with sub-Bachelor degrees are more likely not only to enter occupational areas with career ladders than do those without degrees, but also to pursue additional education that might be necessary for advancement.

Relative immobility of Bachelor degree graduates is a bit more difficult to explain. It may well be that they begin their careers much closer to their maximum professional potential than do holders of sub-Bachelor degrees. Most, in order to move up, have to move into management; inherently restricted communication skills make this especially difficult. Additionally, obstacles to the receipt of incidental information may make it especially difficult to maintain professional currency at their occupational levels.

Unfortunately, directly comparable data for hearing persons are not available. Although some data indicate that education is probably associated with upward mobility (Bureau of Labor Statistics, 1982, 1986), the extent of the association cannot be ascertained.

NOTES

¹Some examples of Duncan SEI scores are as follows: aerospace engineers, 83.5; computer systems analysts, 73.0; dental hygienists, 67.2; real estate salespersons, 52.0; secretaries, 34.7; meter readers, 23.9; printing machine operators, 23.5; private household cleaners, 14.8.

²Questionnaire data are by definition self-reported, and thus often open to question for several different reasons. In this case, the AFQ was tested by Welsh and Walter (1986) and found to yield data that were quite reliable, valid, and generally free of response bias.

³Numbers vary by year of survey, from 525 in 1982 to 780 in 1986.

⁴As with the AFQ, the number of respondents varied, from 622 in 1982 to 748 in 1986.

⁵Actual salary data were available on college graduates up to seventeen years after graduation; for high school graduates, up to twenty years.

⁶This difference in the analysis is due to the following: NTID began operations in 1968, and has too few graduates from 1969-1971 to permit analysis; hence, the cutoff at the 15 year point. The SSFP survey questioned persons who were 1, 3, 5, 10, and 20 years from graduation; no data were available at 15 years.

THE EFFECT OF POSTSECONDARY EDUCATION ON THE OCCUPATIONAL ATTAINMENTS OF DEAF ADULTS

REFERENCES

- Becker, G. (1964). **Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education**. New York: Columbia University Press.
- Best, H. (1914). **The Deaf: Their Position in Society and the Provision for Their Education in the United States**. New York: Cromwell.
- Best, H. (1943). **Deafness and the Deaf in the United States**. New York: MacMillan.
- Bowen, H.R. (1977). **Investment in Learning**. San Francisco, CA: Jossey-Bass.
- Blau, P.M. and Duncan, O.D. (1967). **The American Occupational Structure**. New York: Wiley.
- Bureau of Labor Statistics (1983). **Monthly Labor Review**. Washington, D.C.: U.S. Government Printing Office, 106 #8.
- Duncan, O.D. (1961). A Socioeconomic Index for All Occupations. In A.J. Reiss (Ed.), **Occupations and Social Status**. New York: Free Press.
- Featherman, D.L. and Hauser, R.M. (1976). Prestige or Socioeconomic Scales in the Study of Occupational Achievement? **Sociologic Methods and Research**. Vol. 4, May.
- Featherman, D.L. and Hauser, R.M. (1978). **Opportunity and Change**. New York: Academic Press.
- Featherman, D.L. and Stevens, G.A. (1982). Revised Socioeconomic Index of Occupational Status: Application in Analysis of Sex Differences in Attainment. In M.G. Powers (Ed.), **Measurement of Socioeconomic Status: Current Issues**. Boulder, CO: Westview Press.
- Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds. (1986). **Annual Report of the Board of Trustees**. Washington, D.C.: U.S. Government Printing Office.
- Foster, S. (1986). **The Employment Experiences of Selected Deaf RIT Graduates**. Rochester, NY: Rochester Institute of Technology.
- Hyman, H.H. (1966). The Value Systems of Different Classes: A Social Psychological Contribution to the Analysis of Stratification. In Bendix, R. and Lipset, S. (Eds.) **Status, Class, and Power**. New York: The Free Press.
- Jencks, C., Bartlett, S., Corcoran, M., Crouse, J., Eaglesfield, D., Jackson, G., McClelland, K., Mueser, P., Oineck, M., Schwartz, J., Ward, S., and Williams, J. (1977). **Who Gets Ahead? The Determinants of Economic Success in America**. New York: Basic Books.
- Lunde, R.S. and Bigman, S.K. (1959). **Occupational Conditions among the Deaf: A Report of a National Survey**. Washington, D.C.: Gallaudet College.
- Martens, E.H. (1937). **The Deaf and Hard of Hearing in the Occupational World**. Washington, D.C.: U.S. Office of Education.
- MacLeod-Gallinger, J. (1986). **Secondary School Follow-up Program for the Deaf: Fifth Annual Report**. Rochester, NY: Rochester Institute of Technology.
- Mincer, J. (1975). Education, Experience, and the Distribution of Earnings and Employment. In Juster, F.T. (Ed.) **Education, Income, and Human Behavior**. Berkeley, California: Carnegie Commission on Higher Education.
- Money Income of Households, Families and Persons in the U.S.: 1983**. (1985). (Series P-60 #146) Washington, D.C.: U.S. Government Printing Office.
- Rawlings, B., King, S.J., Karchmer, M.A., and Brown, S.C. (1984). **Gallaudet College Alumni Survey, 1984**. Washington, D.C.: Center for Assessment and Demographic Studies, Gallaudet College.
- Rawlings, B. and King, S.J. (1986). Post Secondary Educational Opportunities for Deaf Students. In Schildroth, A.N. and Karchmer, M.A. (Eds.), **Deaf Children in America**. San Diego, CA: College Hill Press.
- Rosen, B.C. Race, Ethnicity, and the Achievement Syndrome. **American Sociological Review**. Vol. 24, No. 1.
- Salomone, J.J. and Gould, B.A. (1974). **Review and Synthesis of Research on Occupational Mobility**. Columbus, OH: Center for Vocational and Technical Education, Ohio State University.

**THE EFFECT OF POSTSECONDARY EDUCATION
ON THE OCCUPATIONAL ATTAINMENTS OF DEAF ADULTS**

REFERENCES (continued)

- Schein, J.D. and Delk, M.T. (1974). *The Deaf Population of the United States*. Silver Spring, MD: National Association of the Deaf.
- Schroedel, J.G. (1976). *Variables Related to the Attainment of Occupational Status Among Deaf Adults*. (Doctoral Dissertation, New York University, NY) (Univ. Microfilm No. 77-16447)
- Statistical Abstracts of the U.S. (1985)*. Washington, D.C.: U.S. Government Printing Office.
- Stevens, G. and Cho, J.H. (1985). Socioeconomic Indexes and the New 1980 Census Occupational Classification Scheme. *Social Science Research*, Vol. 14.
- Taubman, P. and Wales, T. (1974). *Higher Education and Earnings*. New York, NY: McGraw-Hill Book Co.
- U.S. Bureau of the Census. (1982). *Classified Index of Industries and Occupations*. Washington, D.C.: U.S. Department of Commerce.
- U.S. Bureau of the Census. Unpublished data, 1982, 1986.
- Walter, G.G. and Welsh, W.A. (1986). *Characteristics and Success of Deaf Students at RIT in Three Types of Educational Environments*. Paper presented at the Annual Meeting of the Northeast Association for Institutional Research, Philadelphia, PA.
- Weinrich, J.E. (1972). Direct Economic Costs of Deafness in the United States. *American Annals of the Deaf*, 117, 446-454.
- Welsh, W.A. (1986). *Deaf Graduates in the Workplace: 1985*. Rochester, NY: Rochester Institute of Technology.
- Welsh, W.A. and Schroedel, J.G. (1982). *Predictors of Success for Deaf RIT Graduates*. Rochester, NY: Rochester Institute of Technology.
- Welsh, W.A. and Walter, G.G. (1987). *Credibility of Data Collected via an Alumni Feedback Questionnaire*. Paper presented at the Annual Forum of the Association for Institutional Research, Kansas City, Missouri.
- Welsh, W.A. and Walter, G.G. (1986). *Earnings of Deaf RIT Graduates as Reported by the Internal Revenue Service*. Rochester, NY: Rochester Institute of Technology.
- Young, A.M. (1984, February). One-fourth of the adult labor force are college graduates. *Monthly Labor Review*, 108, 2.

The research reported in this document was produced at the National Technical Institute for the Deaf in the course of an agreement between the Rochester Institute of Technology and the U.S. Department of Education.

ADARA PUBLICATIONS FOR PURCHASE		
No.	Title	Price
0014	Two Decades of Excellence: A Foundation For The Future <i>(Proceedings of 1987 ADARA Conference)</i>	12.00
	Innovations in Habilitation and Rehabilitation of Deaf Adolescents <i>(Proceedings of 2nd Annual Conference of Deaf Adolescents)</i>	12.00
0013	Integrating Human Resources, Technology and Systems In Deafness <i>(Topics of 10th Biennial ADARA Conference)</i>	12.00
0012	Deafness and Mental Health: Emerging Responses <i>(Indiana ADARA 1983 Conference Proceedings)</i>	5.00
0011	Mental Health and Deafness: Strategic Perspectives <i>(Topics of 1983 ADARA National Conference)</i>	12.00
0010	Reasonable Accommodations for Deaf Employees in White Collar Jobs	3.00
0009	Networking and Deafness	9.95
0008	Perspectives on Deafness in Higher Education <i>(University of Tennessee Programs in Deafness)</i>	5.00
0007	Mental Health, Substance Abuse and Deafness	6.00
0006	Rehabilitation and Human Services: Critical Issues of the 80's	7.00
31-001	National Directory of Rehabilitation Facilities Offering Vocational Evaluation and Adjustment Training To Hearing Impaired Persons	6.00

Price does not include shipping and handling.
Mail orders to: ADARA, P. O. Box 55369, Little Rock, AR 72225