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ABSTRACT

The influence of parents and teachers upon the deaf child's formulation of his or her concept of deafness is quite profound. The articulation of the attitudes of parents and teachers toward the types of employment deaf people can perform is, therefore, very important. An attitude instrument and research methodology were developed and tested with parents and teachers at the Northern Counties School for the Deaf in England. The validation and reliability data and the research method are presented in the paper. (Author/BW)

An Instrument and Research Design f r Assessing the Attitudes of Parents and Teachers Toward Occupational Opportunities for Deaf People[1]

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Abstract

The influence of parents and teachers upon the deaf child's formulation of his/her concept of deafness is quite profound. The articulation of the attitudes of parents and teachers toward the types of employment deaf people can perform is, there, very important. An attitude instrument and research methodology were developed and tested with parents and teachers at the Northern Counties School for the Deaf in England. The validation and reliability data and the research method are presented in the paper.

An Instrument and Research Design for Assessing the Attitudes of Parents and Teachers Toward Occupational Opportunities for Deaf People

The majority of jobs currently held by deaf persons would appear to fall within the occupational areas of processing, machine trade, and benchwork (Lunde & Bigman, 1959; Phillips, 1973). In addition, deaf persons tend to hold positions that relate to things more often than those that relate to people and data (Phillips, 1973). The reasons for such a condition are not all together clear, especially when one considers that job entry is mediated not only by the capabilities of deaf persons but also by their career aspirations and perceptions of their handicap.

Meadows and Nemon (1976) have indicated that parents dominate the formulation of the deaf person's definition of deafness. They have also indicated that teachers of the deaf become important in such a definition since they "...have early, intensive, and long term contact with them" (Meadows, 1976, p. 9). Since the influence of parents and teachers upon the formulation of the deaf child's concept of deafness is quite profound, such persons can significantly effect the formation of aspirations regarding careers, and selection of a career. Unfortunately, we have no clear indication of the attitudes of parents and teachers toward deaf persons entering different careers.

DeCaro (1979) has suggested that the articulation of the attitudes of parents and teachers toward the types of employment deaf persons can perform is one of the first steps toward improving employment prospects. He argues that the definition of such a status quo provides a starting point for change.

In order to determine the attitudes of parents and teachers, in England and Wales, toward employment opportunities for young deaf school learners, the author developed an instrument and research methodology. In this paper, the validation and reliability data pertaining to the attitude instrument and the research methodology will be presented.

The Instrument

Fine (1974) has demonstrated that any job can be analyzed and broken into the various work functions a person performs at the job. For this reason, it was initially intended to assess the attitudes of parents and teachers toward deaf people performing various job functions (see Table 1). However, when the function were pilot tested for clarity with parents, it became evident that a person without extensive training in the meaning of the functions found them to be somewhat ambiguous. While these functions may be appropriate for analyzing jobs, they do not lend themselves well to attitude research.

Insert Table 1 about here

In an effort to move from abstraction toward the more concrete, a decision was made to measure the attitudes of parents and teachers toward occupational clusters (i.e., professional, technical, managerial, clerical, sales, service, agricultural, processing, machine trade, benchwork, and structural work). When the occupational clusters and accompanying definitions were piloted, parents recounted thinking of a variety of jobs for a single occupational cluster. Members of the pilot group indicated that they could respond

in a variety of ways depending upon the job they had in mind for an occupational area, e.g., one respondent indicated she could respond in different ways to the professional category depending upon whether she was considering the professional to be a lawyer or a doctor. Clearly, occupational areas were not acceptable as a focus for attitude measurement.

Finally, specific representative job titles were chosen from each of the occupational areas and these titles were piloted for clarity and intelligibility with a sample of parents. The job titles provide to be unambiguous.

In much attitude research, the relationship between measured attitudes and corresponding behaviors has been notoriously low (Calder & Ross, 1973; Wicker, 1969). Ajzen and Fishbein (1977) have, however, suggested that the reason for such a poor relationship has been the lack of correspondence between attitudinal and behavioral entities. They posit four distinct entities possessed by both attitude and behavior; action, target at which the action is directed, context in which the action is performed, and the time at which it is performed. Ajzen and Fisbein recommend that investigators wishing to explain certain behavioral phenomena in terms of attitude must define the behavior and the target at which the behavior is directed, as a minimum requirement. They suggest that a measure of attitude will serve to explain a behavior in so far as each share the same target, action, context and time element. For this reason the attitudinal entities of target, context and action were carefully defined in the current study.

In this study the target was defined as having two levels of disability (a deaf person or a hearing person). The context entity was defined as follows: the person had the appropriate educational qualifications to train

for one of fourteen occupations. Finally the action entity was defined as advising the target to train in an occupation. The three entities, when arranged in all possible combinations, resulted in 28 separate items. These items formed the body of the attitude instrument (see the Appendix).

The questionnaire consisted of three sections; an introduction, the 28 attitude items, and demographic items. In the first section of the questionnaire, the introduction, the respondent was directed to consider that there was a person (deaf or hearing) who possessed the level of educational qualification required to train for some occupation (one of the fourteen). In this section, the respondent was instructed to indicate their opinion toward advising the person to train in the occupational area along a five point Likert scale ranging from "definitely yes" at one extreme to "definitely no" at the other extreme. Respondents were instructed to consider each of the items as representing distinct persons but not persons whom they might know.

In the second section of the questionnaire, teachers were asked to respond to four demographic questions: a) number of years teaching the deaf, b) method of communication used in teaching, c) age, and d) sex. Parents were also asked to respond to five demographic questions: a) age of their child, b) number of years their child had been in a residential school, c) age, d) sex, and 3) sex of sibling. This section was followed immediately by the 28 attitude items (see the Appendix).

Method

Subject

The subjects of the study were teachers and parents of young deaf people enrolled at the Northern Counties School for the Deaf in England. Parents

were randomly selected from among those parents whose children attended the school. All the teachers at the school were selected to participate.

Procedures

An individual random permutation, of the 28 items, was developed for each of the subjects in the study. A computer program was developed to produce the random permutations of the items and the randomly ordered questionnaires were printed by electronic computer.

The instrument was subjected to a four-part validation procedure. First, content validity was established by having the instrument critiqued by experts on deafness, vocational education/research, and research methodology respectively. Appropriate modifications were made. Secondly, four parents were administered the questionnaire one-on-one by the experimenter. The experimenter queried these subjects regarding their understanding of the directions, definitions and attitude items contained in the questionnaire. The questionnaire was modified to eliminate the misperceptions and misunderstandings identified. Finally, the instrument was administered to 45 parents and re-administered two weeks later. There were 31 parents who responded to the first mailing and 17 of these responded to the second administration of the test instrument. The instrument was also administered once to all 25 teachers at the school and 16 of them responded.

Results and Conclusions

In an effort to assess the stability of the instrument, test-retest delta (Δ) scores were computed for each of the items, in the instrument administered to parents, and a frequency table was constructed (Table 2). Further, the scores of all items pertaining to advising deaf persons were summed to obtain

a total test and total retest score for each parent. The same was done for all items pertaining to advising hearing persons. A test-retest correlation coefficient was calculated for these scores; r_{xy}=0.63 for deafness related items, r_{xy}=0.67 for hearing related items. In addition, the internal consistency was computed for the deafness related items, hearing related items and the total test. These coefficients were computed for both parents and teachers (Table 3). Finally, a test-retest correlation coefficient and chi-square statistic was computed for each of the test items (Table 4).

Insert Tables 2, 3 and 4 about here

The data in Table 2 tends to indicate that the hearing related items are more stable than the deafness related items. For those items which appear to be the most unstable, however, it can be seen that the percent of respondents whose scores changed no more the plus or minus (±1) is very high (Deaf Lathe Operator = 71%, Deaf Manager = 76%, Deaf Foundry Worker = 69%, Hearing Miner = 82%, Deaf Architect = 82%, Deaf Cook = 88%, and Deaf Draftsman = 88%). The test-retest correlation coefficient for summed hearing related item score (r_{xy}=0.67) and summed deafness related item scores (r_{xy}=0.63) is relatively high for an attitude instrument. This indicates that the instrument will provide a reliable measure of attitude toward advising hearing people and advising deaf people across all the occupations queried. The reliability of any single item, however, cannot be infered from these reliabiity statistics. Test-retest item correlation coefficients and chi-square statistics were calculated. Although correlation coefficient were computed for the test-retest

scores of each item, they were not considered to be adaquate since inspection of the data showed that there was not a distribution of scores across the Likert scale. For this reason a nonparametric chi-square statistic was used as a measure of the test-retest reliability of each item in the instrument (Table 3). The chi-square statistics indicate that there is no reason to believe that the distributions of test scores (test vs retest) for each item is significantly different. Conover (1971) has, however, cautioned that the chi-square test will provide a good approximation to the true value of α if the cell sizes in a contingency table are large. He has indicated that the approximation may be poor if any cell has a frequency of less than one or if 20% of the cells have a value of less than five (5). Unfortunately, such was the case in most of the contingency table constructed for the test items. To help minimize this drawback columns in the contingency tables whose cells had zero (0) as entries were eliminated (see Table 5).

Insert Table 5 about here

The internal consistancy coefficients indicate that both parents and teachers attitudes regarding advising hearing people across occupations is more homogeneous than their attitudes about advising deaf people with the same academic qualifications. This would tend to indicate that a factor other than academic qualification is operating in the stated attitudes of parents and teachers, e.g., bias, communication disability, or the like.

Summary

The test would appear to possess face validity and to provide a reliable measure of attitudes toward advising hearing or deaf persons across the occupations specified in the instrument. With regard to the reliability of each individual test item, there is no reason to believe that the test-retest score distributions are significantly different.

This instrument can provide the dependent variable (attitude toward advisory) in a 2x14x2 block factorial design (repeated measure design). This design could possess two levels of rater (parent or teacher), two levels of disability (hearing or deaf) and fourteen levels of occupation. A repeated measures analysis of variance could be used to proble the main and interaction effect. The reliability data indicates that while a researcher could be confident in a significant rater or disability effect, the significance of an occupation effect must be quite strong to engender confidence. In addition, first and second order interactions involving occupational category must be strong and contrasts must be powerful to be convincing.

Footnotes

[1]This paper was prepared at the National Technical Institute for the Deaf at the Rochester Institute of Technology in the course of an agreement with the United States Department of Education (PL 89-36). This paper was presented at the American Educational Research Association Annual Convention in April, 1979 at Los Angeles.

[2]This study was conducted while the author was a Rotary Foundation Fellow on Sabbatical Leave from NTID at RIT and a visiting member of staff in the School of Education at the University of Newcastle-upon-Tyne, England.

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Table 1.

Job Functions

Data Functions	People Functions	Thing Functions
Synthesizing	Advising	Setting Up
Coordinating	Negotiating	Precision Working
Analyzing	Instructing	Operating-Controlling
Compiling	Supervising	Driving-Operating
Computing	Amusing	Manipulating
Copying	Persuading	Tending
Comparing	Speaking-Signaling	Feeding-Offbearing
	Serving	Handling

Table 2.

Frequency Count for Test Item Delta Scores

	Delta Scores									
	+4	+3	+2	+1	0	-1	-2	-3	-4	n
Farmwork (D)	-	-	-	-	12	1	1	1	1	17
Farmworker (H)	-	-	-	-	14	3	-	-	-	17
Jeweller (D)	-	-	-	1	12	1	2	-	-	16
Jeweller (H)	-	-	-	-	14	2	-	-	-	16
Bookkeeper (D)	-	-	-	1	13	2	-	-	-	16
Bookkeeper (H)	-	-	-	1	14	2	-	-	-	17
Construction Worker (D)	-	1	-	2	10	1	1	1	-	16
Construction Worker (H)	-	-	-	2	13	2	-	-	-	17
Lathe Operator (D)	-	-	-	2	8	2	4	-	1	17
Lathe Operator (H)	-	-	-	3	13	1	-	-	-	17
Manager (D)	-	-	-	1	9	3	2	-	2	17
Manager (H)	1	-	-	1	12	2	1	1	1	17
Foundry Worker (D)	-	-	1	3	7	1	3	-	2	17
Foundry Worker (H)	2	-	-	3	11	1	-	-	-	17
Miner (D)	-	-	1	-	11	3	1	-	1	17
Miner (H)	2	-	-	2	9	3	-	-	-	16
Doctor (D)	-	-	1	-	12	2	-	-	2	17
Doctor (H)	-	-	-	2	14	1	-	-	-	17
Architect (D)	-	-	1	3	8	3	1	-	1	17
Architect (H)	-	-	-	1	16	-	-	-	-	17
Shop Assistant (D)	-	-	1	-	13	2	1	-	-	17
Shop Assistant (H)	1	-	-	-	15	1	-	-	-	17
Cook (D)	-	-	-	3	9	2	1	-	1	16
Cook (H)	-	-	-	2	13	2	-	-	-	17
Draughtsman (D)	-	-	1	2	9	3	-	-	1	16
Draughtsman (H)	1	-	-	-	16	-	-	-	-	17
Lorry Driver (D)	-	-	-	2	11	2	1	-	1	17
Lorry Driver (H)	1	-	-	2	10	4	-	-	-	17

Table 3.

Internal Consistancy Coefficients

	Teachers	Parents
hearing related items	0.85	0.88
deafness related items	0.62	0.67
total test	0.82	0.84

Table 4.

Test-Retest Correlation Coefficient

and

Chi-Square Statistic

	r_{xy}	d.f.	χ^2	p
Farmwork (D)	0.70	4	3.22	0.52
Farmworker (H)	0.94	4	2.03	0.73
Jeweller (D)	0.79	4	1.04	0.90
Jeweller (H)	0.71	1	0	1.00
Bookkeeper (D)	0.87	3	4.13	0.39
Bookkeeper (H)	0.79	2	3.84	0.57
Construction Worker (D)	0.69	4	1.62	0.87
Construction Worker (H)	0.75	2	0	1.00
Lathe Operator (D)	0.67	4	3.83	0.57
Lathe Operat (H)	0.89	3	1.04	0.90
Manager (D)	0.36	4	4.33	0.36
Manager (H)	0.14	3	6.57	0.16
Foundry Worker (D)	0.10	4	5.63	0.23
Foundry Worker (H)	0.54	4	5.62	0.23
Miner (D)	0.02	3	2.00	0.74
Miner (H)	0.57	4	3.40	0.50
Doctor (D)	0.18	4	5.49	0.24
Doctor (H)	-0.09	1	0.37	0.98
Architect (D)	0.53	4	4.82	0.31
Architect (H)	0.68	1	0.37	0.98
Shop Assistant (D)	0.82	4	2.50	0.65
Shop Assistant (H)	0.61	4	1.04	0.90
Cook (D)	0.20	4	5.05	
Cook (H)	0.68	4	4.82	0.31
Draughtsman (D)	-0.03	3	4.20	0.38
Draughtsman (H)	0.18	2	1.03	0.90
Lorry Driver (D)	0.78	4	2.20	0.70
Lorry Driver (H)	0.34	4	2.53	0.64

Table 5.

Example Contingency Table for

Test Item Number 8

	definately yes				definately no
	(5)	(4)	(3)	(2)	(1)
test	12	3	2	0	0
retest	12	3	2	0	0

Appendix

DIRECTIONS

THIS QUESTIONNAIRE ASKS YOUR OPINION ABOUT ADVISING DEAF OR HEARING PEOPLE TO TRAIN FOR 14 DIFFERENT OCCUPATIONS.

TRY NOT TO THINK ABOUT A PERSON YOU KNOW AS YOU COMPLETE THE QUESTIONNAIRE.

IN THE QUESTIONNAIRE THE WORDS DEAF PERSON MEAN:

DEAF PERSON: A PERSON WHO HAS A PROFOUND HEARING LOSS, WHO HAS SEVERE SPEECH DIFFICULTIES, AND WHO DOES NOT HAVE OTHER PHYSICAL HANDICAPS.

BELOW ARE THREE EXAMPLE ITEMS TAKEN FROM A TEST COMPLETED BY A MR. JONES. AFTER HE COMPLETED THE QUESTIONNAIRE, I ASKED HIM TO EXPLAIN HIS ANSWERS TO ME. HIS EXPLAINATIONS ARE HANDWRITTEN BELOW EACH QUESTION, AND THEY SHOULD HELP TO CLARIFY THE MEANING OF THE X MARKS.

example:

	DEFINITELY YES				DEFINITELY NO
7. I WOULD ADVISE A HEARING PERSON WITH THE RIGHT KIND OF QUALIFICATIONS (I.E., THE APPROPRIATE A LEVELS, O LEVELS, CSES OR OTHER NECESSARY REQUIREMENTS) TO TRAIN TO BE A BLASTER. (20)	X	X	(X)	X	X
The person had the qualifications to train but I was worried about safety and not sure.					
8. I WOULD ADVISE A DEAF PERSON WITH THE RIGHT KIND OF QUALIFICATIONS (I.E., THE APPROPRIATE A LEVELS, O LEVELS, CSES OR OTHER NECESSARY REQUIREMENTS) TO TRAIN TO BE A PRINTER. (19)	DEFINITELY YES				DEFINITELY NO
	X	(X)	X	X	X
I thought it was a good occupation for the deaf person but I still had some concerns.					
9. I WOULD ADVISE A DEAF PERSON WITH THE RIGHT KIND OF QUALIFICATIONS (I.E., THE APPROPRIATE A LEVELS, O LEVELS, CSES OR OTHER NECESSARY REQUIREMENTS) TO TRAIN TO BE A PILOT. (23)	DEFINITELY YES				DEFINITELY NO
	X	X	X	X	(X)
The person had the right qualifications to train (was bright enough) but a deaf person could never fly a plane.					

PLEASE READ THE QUESTIONS ON THE NEXT FIVE PAGES CAREFULLY. DO NOT PUT REASONS FOR YOUR ANSWERS BELOW EACH QUESTION.

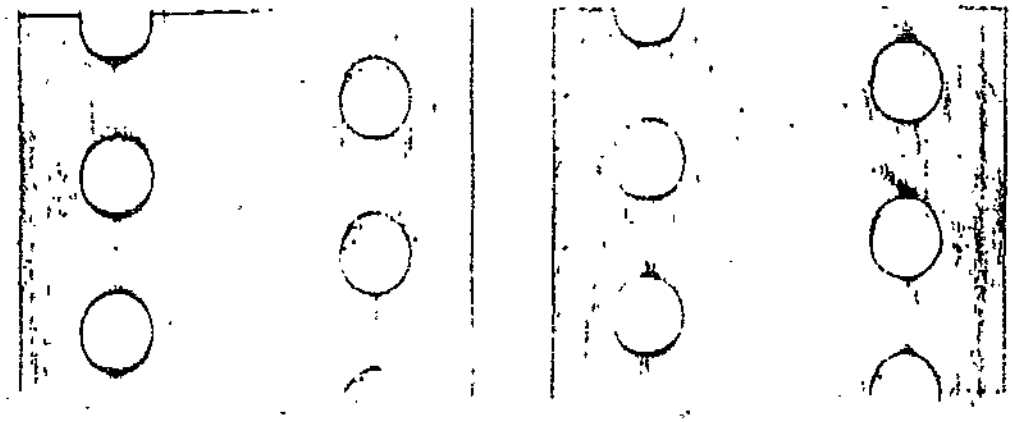
THANK YOU FOR YOUR HELP.

YOUR SEX-_____ YOUR AGE-_____ NUMBER OF YEARS TEACHING DEAF PERSONS-_____

METHOD OF COMMUNICATION YOU USE IN TEACHING- A. ORAL B. MANUAL C. TOTAL COMMUNICATION D. OTHER

(46)

1. I WOULD ADVISE A DEAF PERSON WITH THE RIGHT KIND OF QUALIFICATIONS (I.E., THE APPROPRIATE A LEVELS, O LEVELS, CSES OR OTHER NECESSARY REQUIREMENTS) TO TRAIN TO BE A DOCTOR. (17)	DEFINITELY YES				DEFINITELY NO
	X	X	X	X	X
2. I WOULD ADVISE A HEARING PERSON WITH THE RIGHT KIND OF QUALIFICATIONS (I.E., THE APPROPRIATE A LEVELS, O LEVELS, CSES OR OTHER NECESSARY REQUIREMENTS) TO TRAIN TO BE A BOOKKEEPER. (6)	DEFINITELY YES				DEFINITELY NO
	X	X	X	X	X
3. I WOULD ADVISE A DEAF PERSON WITH THE RIGHT KIND OF QUALIFICATIONS (I.E., THE APPROPRIATE A LEVELS, O LEVELS, CSES OR OTHER NECESSARY REQUIREMENTS) TO TRAIN TO BE A DRAUGHTSMAN. (25)	DEFINITELY YES				DEFINITELY NO
	X	X	X	X	X
4. I WOULD ADVISE A HEARING PERSON WITH THE RIGHT KIND OF QUALIFICATIONS (I.E., THE APPROPRIATE A LEVELS, O LEVELS, CSES OR OTHER NECESSARY REQUIREMENTS) TO TRAIN TO BE A CARPENTER. (2)	DEFINITELY YES				DEFINITELY NO
	X	X	X	X	X
5. I WOULD ADVISE A DEAF PERSON WITH THE RIGHT KIND OF QUALIFICATIONS (I.E., THE APPROPRIATE A LEVELS, O LEVELS, CSES OR OTHER NECESSARY REQUIREMENTS) TO TRAIN TO BE A SHOP ASSISTANT. (21)	DEFINITELY YES				DEFINITELY NO
	X	X	X	X	X



	DEFINITELY YES				DEFINITELY NO
7. I would advise a hearing person with the right kind of qualifications (i.e., the appropriate A levels, O levels, CSES or other necessary requirements) to train to be a blaster. (20)	X	X	X	X	X
8. I would advise a deaf person with the right kind of qualifications (i.e., the appropriate A levels, O levels, CSES or other necessary requirements) to train to be a printer. (19)	X	X	X	X	X
9. I would advise a deaf person with the right kind of qualifications (i.e., the appropriate A levels, O levels, CSES or other necessary requirements) to train to be a pilot. (23)	X	X	X	X	X