

THE PREPARATION NEEDS OF THE TEACHER OF
THE MULTIHANDICAPPED DEAF STUDENT

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TABLE OF CONTENTS

	Page
Acknowledgements	iii
List of Tables	v
CHAPTER	
I. INTRODUCTION	1
The Multihandicapped Hearing Impaired Population	1
Requirements of Teachers of the Multi- handicapped Hearing Impaired	1
Statement of the Problem	2
Purpose of the Study	3
Limitations of the Study	3
II. REVIEW OF THE LITERATURE	5
The Multihandicapped Hearing Impaired Population	5
Requirements of Teachers of the Multi- handicapped Hearing Impaired	5
The Mail Questionnaire as a Research Technique	8
Summary of the Research	9
III. METHODS OF STUDY	11
Sample	11
Instrumentation	11
Null Hypotheses	12
Methodology	12
Procedure	13
Data Analysis	13
IV. RESULTS	19
Pilot Study	19
Pilot Analysis	20
Final Study	24
Final Analysis	24
V. SUMMARY AND CONCLUSIONS	31
APPENDICES	
A. Letter to Program Administrators	35
B. Letter to Participants	36
C. Questionnaire	37
D. Table A	42
E. Table B	43
REFERENCES	44

LIST OF TABLES

Table		Page
1.	Means and Standard Deviations	21
2.	Canonical Correlations	23
3.	Data on Demographic Variables	25
4.	Means and Standard Deviations	27
5.	Canonical Correlations	28
6.	Coefficients of Concordance	30
A.	Frequencies of Expertise Development Responses	42
B.	Frequencies of Classroom Management Responses	43

CHAPTER I

Introduction

The Multihandicapped Hearing Impaired Population

A major responsibility faced by educators of the deaf today is the increasing number of multihandicapped deaf children (Kent, 1971). The term multihandicapped deaf refers to those individuals with a hearing impairment as well as an additional handicapping condition. Changes in major etiologies of hearing impairment suggest that the responsibility for the education and service of the multihandicapped deaf child under the guise of deaf education will not only remain a major responsibility, but increase in the years ahead (Kent, 1970). Projections through the eighties estimate that as many as two thousand multihandicapped deaf persons will reach nineteen years of age each year (Craig, 1976).

Requirements of Teachers of the Multihandicapped Hearing Impaired

Since the quality of instruction, so vital to the education of hearing impaired children, is directly linked to the preparation of their teachers, it is imperative that teachers of hearing impaired multihandicapped

students be adequately prepared to serve the specialized needs of this population. Modern approaches to teacher preparation have their roots in the technologic advances following World War II, the members of the various disciplines who became interested in the educational outcomes of deaf children, and the involvement of the federal government in educational matters. These interests of a prior decade culminated in a period of reorganization during the 1965-1975 period. An accomplishment of study, definition, adoption, and implementation of professional standards was completed with maximum participation of all concerned. The multifaced ramifications of early profound deafness were recognized and attempts made to emphasize the multidisciplinary and specialized requirements of professionals engaged in teaching deaf persons of different ages and in a variety of educational settings (Frisina, 1976). Although the Council Committee on Professional Preparation and Certification formally adopted "Standards for Certification of Teachers of the Hearing Impaired" in January of 1972, there is evidence that not all states have utilized these standards in the selection of their teachers (Hoag & Stelle, 1976).

Statement of the Problem

Research as late as 1977 is shown to be concerned with the assessment of certification standards for teachers of the hearing impaired. It was concluded that more specialization by teachers of the deaf would be needed for the future, but opinions were divided as to what the specific requirements should be (Prickett & Hunt, 1977). Current computer and manual research indicates no resolution of these issues and no evidence of research in the area of preparation of teachers of multihandicapped hearing impaired students. Therefore, it is evident that as the incidence of the multihandicapped hearing impaired student population increases, it is necessary to obtain evidence of the unique preparation needs of teachers working with this specialized population.

Purpose of the Study

The major purpose of this study was to obtain evidence as to the preparation of teachers presently working with multihandicapped hearing impaired students. Teacher preparation in the areas of child development, handicapping conditions, classroom management, and interpersonal relationships was studied by means of a teacher questionnaire.

Limitations of the Study

Only those teachers currently working with multi-handicapped hearing impaired students were studied. Assumptions inherent in the study included: 1) that the teachers studied had a degree(s) or certification in the area of education of the deaf, therefore these competencies were not addressed in the questionnaire, 2) that the population identified as deaf-blind in the American Annals of the Deaf Annual Survey of Programs, 1981, was not a consideration when selecting programs serving multihandicapped students as teaching this population requires a specialized certification, and 3) that in selecting programs to be studied, equal consideration was given to residential and day school settings as this distinction does not affect classroom programming.

CHAPTER II

Review of the Literature

The Multihandicapped Hearing Impaired Population

Approximately one in four hearing impaired students have been found to have an educationally significant secondary handicapping condition (Gentile & McCarthy, 1973). These additional handicapping conditions include mental retardation, visual impairment, emotional disturbance, orthopedic problems, severe health problems, or any combination of the above (Denton, 1971). Jensema and Trybus (1975) found that approximately nine percent of hearing impaired students demonstrated educationally significant emotional or behavioral problems and that this problem was more likely to occur among deaf boys and multihandicapped deaf children.

Requirements of Teachers of the Multihandicapped Hearing Impaired

In response to managerial and educational concerns of programming for the students, Crone (1980) suggests that these problems be modified by utilizing elimination, prescriptive, and preventive-response pattern programming techniques in the classroom.

The increase in programs and services for hearing impaired students with emotional, behavioral, and other secondary handicaps has given rise to extra personnel working with the deaf in an educational setting, not necessarily in the academic role (Prickett & Hunt, 1977). Classroom aides and program consultants have become part of the educational team in response to the wide variety of psychiatric, neurologic, medical, behavioral, and academic needs of the multihandicapped student. These auxiliary personnel provide assistance to the primary teacher in terms of everyday management, assessment, crisis intervention, and long term planning for the multihandicapped student population (Gerber & Goldberg, 1980).

In conjunction with the augmentation of academic personnel is the need for teachers trained in a team approach. This team approach extends also to working with parents and including them as part of the decision-making team. As 90% of hearing impaired students are born to hearing parents, assisting parents in accepting and coping with their children's handicaps and subsequent needs is an integral part of the teacher's job (Schein & Delk, 1974).

Teacher expertise in the areas of specific behavior management techniques and interpersonal skills has been presupposed in the previously cited literature. Coalescent with expertise in these areas is the identification of competencies in the techniques of individualized instruction, task analysis, and modality assessment as being fundamental characteristics of successful teachers of the hearing impaired (Gonzales, Serwatka, & Van Wagel, 1980). Since it is difficult to find acceptable commercially prepared instructional materials for the multi-handicapped hearing impaired student, the teacher is also expected to be competent in the area of material making (Hack & Brosmith, 1980). Joekel (1980) suggested that developing teacher expertise in these areas as well as the areas of typical and atypical human development, learning styles, individual education planning, and working with current local, state and federal guidelines be the major emphasis of teacher preparation programs in the future.

Two general impressions from the literature are clear. First, as a group, special education teachers perceived by their supervisors as superior tend to have more formal educational experience, particularly at the graduate level. Secondly, the superior teachers have had more practicum experience in their preparatory coursework

with exceptional children (Westling, Koorland, & Rose, 1981). Excluded in the studied groups of special education teachers are teachers of the multihandicapped hearing impaired.

The Mail Questionnaire as a Research Technique

Utilization of the mail questionnaire as a research technique to study the characteristics of a particular population such as special educators has been revived in recent years. After the initial flurry of activity during the 1920's and 30's, interest in mail questionnaires as a topic for scientific research has been minimal for several decades. A survey of the literature for the past ten years, however, shows an increasing frequency of papers and articles reporting research on topics related to increasing mail questionnaire response rates (Marshall & Gee, 1975). Linsky (1975) surveyed mail questionnaire techniques since 1935 and concluded there is strong evidence of the positive effect of the following five variables on response level. These are (1) use of one or more follow-up reminders for nonrespondents, especially intensive techniques such as telephone, registered mail, and special delivery letters; (2) precontact with respondents, (3) type of postage on ongoing and return mail; with special delivery, air mail and hand stamped postage

being most effective; (4) rewards included with the questionnaire, and (5) the sponsoring organization and title of the person signing the letter. Linsky (1975) also states that evidence is equivocal as to the effects of the following factors. These factors are 1) explaining the place and importance of the respondent of the survey; 2) personalizing the questionnaires which is effective when not confounded with the "anonymity" issue; 3) anonymity which may or may not have a positive effect on response rates depending on the nature of the survey; 4) appeals based on the social benefits of the survey, or appeals to help the researcher, which have not proven effective, and 5) the length of the questionnaire which was inconsistently related to the response rate. Berdie (1973), however, found no difference in response rates related to the length of the questionnaire. Oppenheim (1966) pointed out the necessity of field testing the questionnaire to identify and rectify problems of questionnaire design to further validate the use of the questionnaire as a research technique.

Summary of the Research

It is evident from the research that the field of education of the deaf must develop expertise in the area of educational programming for the multihandicapped

hearing impaired student in order to serve this ever increasing population.

It is also evident as certification requirements for teachers of the hearing impaired are not standardized nationally, that the development of certification requirements for teachers of the multihandicapped hearing impaired is not seen as an immediate concern. However, teachers of this student population are expected to develop, implement, and evaluate education programs utilizing skills in the areas of: behavior management, individualized instruction, academic programming, interpersonal relationships, and child development. These expectations are conjecture as no formal investigation into the competencies and needs of teachers presently working with the hearing impaired multihandicapped student has been formulated. This is the necessary starting point in providing quality education for the student, that is, assuring the competency of the teacher and will serve as the premise for this investigation.

Chapter III

Method of Study

Sample

The research sample was drawn from programs for the hearing impaired across the United States necessary to obtain an N of 150. Programs selected were those programs identifying a population of 15 or more hearing impaired multihandicapped students as indicated in the multihandicapped category of the 1981 American Annals of the Deaf survey of programs.

Instrumentation

Each subject was asked to complete a two part questionnaire. The first section of the questionnaire required the respondent to answer demographic questions by filling in the blanks. The second section of the questionnaire required the respondent to answer questions utilizing a ranking system as to their educational background and application of this education to the classroom. Completed questionnaires were returned by means of a stamped, self-addressed envelope.

Null Hypotheses

- Ho¹: There is no association between the two scales, expertise development and relevance to successful classroom management, in the area of child development.
- Ho²: There is no association between the two scales, expertise development and relevance to successful classroom management, in the area of handicapping conditions.
- Ho³: There is no association between the two scales, expertise development and relevance to successful classroom management, in the area of classroom management.
- Ho⁴: There is no association between the two scales, expertise development and relevance to successful classroom management, in the area of interpersonal relations.

Methodology

Individuals who completed the teacher questionnaire were selected with the cooperation of the school supervisor on the basis of the teacher's direct experience in teaching a classroom for multihandicapped hearing impaired students. Each questionnaire included a form letter conforming to the regulations of advised consent and

permission for participating in the study, a letter describing the nature of the study, and directions for completion of the questionnaire. A stamped, self-addressed envelope was provided for the return of the questionnaire. Questionnaires not returned within two weeks were pursued by sending a follow-up letter to the nonrespondent.

Procedure

An open-ended field test form of the questionnaire were given to a sample of 15 subjects representative of the population of teachers of the multihandicapped hearing impaired. Answers from the field test questionnaire provided the data from which modifications in the final questionnaire were made. The revised questionnaires were then sent to programs identifying a population of more than 15 multihandicapped hearing impaired students, excluding those students labeled primarily as deaf-blind.

Data analysis

In the analyses of the data, descriptive statistics of the demographic data were calculated. In the questionnaire itself there exists a total of 46 responses; 2 for each of the 23 subareas, on each respondent. The first measurement represents the individual's expertise

development and the second reflects an importance ranking of that same subarea by the individual.

In observing multiple responses from each individual it must be considered that the data are in reality, multidimensional in nature, and parametric methods may be used to analyze the data. It is prudent to realize that 23 separate analyses should be made with care as far as making statements about significance levels. Therefore, the pilot study involved an examination of the results for correlations among the 23 subareas. The correlations were investigated utilizing the χ^2 approximate test of independence at the $\alpha = .25$ level with $\frac{1}{2} p(p-1)$ degrees of freedom, where

$$\chi^2 = -(N-1-2p+5/6) \ln R /$$

and $p =$ number of responses,

$R =$ correlation matrix of all pairwise comparisons.

Then, if the correlations as determined by the χ^2 approximate test of independence are not overly strong, each of the 23 subareas can be tested for evidence of significance dependence at the $\alpha = .25$ level by means of a contingency table analysis and the associated χ^2 test. These 23 separate and independent tests of hypotheses on subareas can be combined into the four area hypotheses tests by means of "Fisher-2 long p_i " method.

Each of these four analyses were conducted in a similar manner. Therefore, illustrated is the methodology for the first hypothesis, H_0^1 , only.

Test of Hypothesis H_0^1 , Child Development

H_0^1 : There is not an association between the two scales in the area of child development.

Test of Sub-Hypothesis 1.1
Language Development

		Relevance Ranking				
		1	2	3	4	5
Expertise	1	O_{11}	O_{12}	O_{13}	O_{14}	O_{15}
Development	2	O_{21}	O_{22}	O_{23}	O_{24}	O_{25}
	3	O_{31}	O_{32}	O_{33}	O_{34}	O_{35}
	4	O_{41}	O_{42}	O_{43}	O_{44}	O_{45}

where O_{ij} = the observed frequency of responses that fall into the (ij)th cell.

Subhypothesis 1.1

$H_0^{1.1}$: The two scales, relevance ranking and expertise development represented by the rows and columns, are statistically independent, for the subarea of language development.

$H_a^{1.1}$: The two scales are not independent, i.e., there is an association between the two scales.

This hypothesis is tested by the statistic

$$X^2 = \sum_{i=1}^4 \sum_{j=1}^5 (O_{ij} - E_{ij})^2 / E_{ij}$$

where

$$E_{ij} = \frac{R_i C_j}{n} = \text{expected number in the } (ij)\text{th cell}$$

$$R_i = \sum_{j=1}^5 O_{ij} = \text{observed number in the } i\text{th row}$$

$$C_j = \sum_{i=1}^4 O_{ij} = \text{observed number in the } j\text{th column.}$$

The value of the chi-square has $v = (4-1)(5-1) = 12$ degrees of freedom. Using the chi-square tables, the significance of this statistic is obtained. For example, if the $X^2 = 23.3$, the $P_{ai} = .025$.

Then this test is repeated for the 5 subareas in the child development area, obtaining $P_{a1} P_{a2} \dots P_{a5}$, the significance level of each X^2 . Then compute

$$T_A = -2 \log \sum_{i=1}^5 P_{ai}$$

This is the "Fishers $-2 \log p$ " statistic which is a chi-square with $2 \times 5 = 10$ degrees of freedom. The significance of this \underline{T} , is the combined significance level of a test of hypothesis of no association between the two scales in the area of child development. We then reject H_0^1 if $\underline{T}_1 > \chi^2_{.05;10} = 18.3$.

The only difference between the four analyses was the degrees of freedom associated with the combined test statistic, \underline{T} , since the number of subareas varies. Therefore, the hypothesis was rejected if the computed values of \underline{T} are greater than the following values of \underline{t} :

$$\begin{aligned}\underline{T}_2 &> \chi^2_{.05,14} = 23.7 \\ \underline{T}_3 &> \chi^2_{.05,14} = 23.7 \\ \underline{T}_4 &> \chi^2_{.05,8} = 15.5.\end{aligned}$$

If, however, the 23 pair of variates do not appear to be independent, a multidimensional technique to investigate the relationship structure between the expertise development variates and ranking variates can be used. Multidimensional techniques simultaneously allow a test of the null hypothesis of no relationship between the two sets of variates. Even further, if the hypothesis of no dependence is rejected, canonical correlation methodology can be used to describe the dependency between the two sets.

The independence hypothesis between the two sets of variates can be tested by means of the greatest characteristic root statistic, C_1 . The hypothesis of no dependence was rejected if $C_1 > X_{.05; s, m, n}$ where $s=23$, $m=1/2$, and $n=N-2/2$, N being the total sample size ($N=100$).

Canonical correlation was then utilized to calculate first the linear combinations of the variates that produced the maximum correlation between the two sets of variates. Next, a second linear combination, independent of the first was calculated, that produced maximum correlation between the two sets, and so forth. Examination of these linear combinations allowed for investigation of the nature of the dependencies between the two subsets.

CHAPTER IV

Results

The major purpose of this study was to obtain evidence as to the preparation of teachers presently working with multihandicapped hearing impaired students. Evidence was also obtained as to the relative importance of sub-topics in the areas of child development, handicapping conditions, classroom management, and interpersonal skills. The study also endeavored to determine if a relationship existed between a respondent's expertise development and ranking of the subareas in each of the 4 major sections.

Pilot Study

An open-ended field test form of the questionnaire was given to a sample of 15 subjects representative of the population of teachers of the multihandicapped hearing impaired. Answers from the field test questionnaire provided the data from which modifications in the final questionnaire were made. Modifications included the addition of the subarea of sexual development to the child development sections. In addition, the subareas of working with administrators and working with student

teachers were incorporated into the interpersonal relationships sections. Directions were clarified in the expertise development section to insure the respondent's selection of the one best response in the subareas as opposed to multiple responses.

The pilot study involved an examination of the results to determine if the multiple responses from each respondent were related. This information was then used to determine the statistical technique utilized to investigate the relationship between the expertise development variates and ranking variates in the final study.

Pilot Analysis

Descriptive statistics in terms of the mean and standard deviation were compiled for the pilot analysis and are presented in Table 1. Note that variables A1 and B1, respectively language development and hearing impairment in the expertise development section, have zero standard deviations. Correlations for each pair of variables were computed. The decision to use canonical correlation analysis was made due to the number of pairwise correlations in excess of .5. The lack of variability in questions A1 and B1 effected their removal from the analysis. Also, questions D3 and D4, respectively working with teacher aides and working with consultants,

Table 1
Means and Standard Deviations

Variable	Expertise		Classroom Management	
	\bar{X}	s	\bar{X}	s
Language Development	1.00	(0.00)	3.40	(0.91)
Cognitive Development	1.13	(0.52)	2.00	(1.00)
Emotional Development	2.00	(1.46)	1.53	(0.83)
Motoric Development	2.07	(1.28)	3.33	(1.18)
Social Development	2.40	(1.55)	4.53	(0.74)
Hearing Impairment	1.00	(0.00)	2.00	(1.36)
Learning Disabilities	2.07	(1.49)	3.33	(1.35)
Physical Impairment	2.47	(1.51)	5.26	(0.70)
Mental Retardation	2.00	(1.46)	2.13	(0.92)
Emotional Disturbance	2.80	(1.52)	2.73	(0.80)
Visual Impairment	2.67	(1.45)	5.80	(0.86)
Health Impairment	2.73	(1.39)	6.80	(0.68)
Diagnostic Procedures	1.40	(1.06)	3.07	(1.98)
Curriculum Planning	2.13	(1.51)	4.40	(0.83)
Writing Objectives	1.67	(1.23)	4.53	(1.81)
Behavior Modification	2.00	(1.46)	1.80	(1.01)
Individualized Instruction	2.47	(1.51)	2.40	(0.91)
Record Keeping	3.33	(1.40)	6.80	(0.86)
Making Materials	2.60	(1.55)	5.07	(1.16)
Working with Parents	3.27	(1.28)	2.27	(0.88)
Working with a Team Teacher	3.53	(1.25)	1.47	(0.92)
Working with Teacher Aides	3.80	(0.78)	2.67	(0.62)
Working with Consultants	3.80	(0.78)	3.67	(0.98)

n=15

had a correlation of +1.0. To avoid computational problems one of the two variables had to be removed. D4 was selected for removal. Relationships between a respondent's expertise training and ranking of the subareas as to their importance in a classroom was investigated utilizing canonical correlations. Each of the 4 areas were analyzed separately using the Bonferroni type significance bounds due to the questionable independency of the areas. To insure overall significance level of .05 (on the 4 areas simultaneously), a significance level of $.05/4 = .0125$ on each of the 4 areas individually was utilized. The results of the four canonical correlation runs are depicted in Table 2. The significance levels in the last column indicate possible relationships in the last 3 areas. In the handicapping conditions area, the apparent relationship appeared to be due mainly to visual impairment and hearing impairment. As training in visual impairment became more formal, the importance of hearing impairment in the classroom decreased. In the classroom management area, as training in individualized instruction became more formal and training in curriculum planning became less formal, the importance of the subareas of diagnostic procedures, writing objectives, record keeping, and making materials increased. In the area of interpersonal relations, the relationship seemed to be that as

Table 2
Canonical Correlations

Variable	1st Canonical Coefficients for Expertise	1st Canonical Coefficients for Classroom Management	Canonical Correlation	Significance
Language development	---	1.716		
Cognitive development	1.025	1.577		
Emotional development	.129	1.610	.952	.09
Motoric development	-.001	1.130		
Social development	-.023	.213		
Hearing Impairment	---	1.621		
Learning Disabilities	-.284	.825		
Physical Impairment	.260	.966		
Mental Retardation	-.414	.942	.999	.005
Emotional Disturbance	.277	.716		
Visual Impairment	-.941	.107		
Health Impairment	-.116	.679		
Diagnostic Procedures	.464	1.374		
Curriculum Planning	-1.658	.339		
Writing Objectives	.319	1.019		
Behavior Modification	.163	.475	.999	.000
Individual Instruction	1.043	.355		
Record Keeping	-.163	1.206		
Making Materials	.475	1.074		
Working with Parents	.072	-.141		
Working with a Team Teacher	-.976	.956	.945	.009
Working with Teacher Aides	.061	-.120		
Working with Consultants	---	.084		

n=15

education in team teaching became less formal, team teaching was rated as more important in the classroom. If the relationships noted above are population inherent they should appear again in the subsequent analysis.

Final Study

The research sample was drawn from 45 programs for the hearing impaired across the United States identifying a population of 15 or more hearing impaired students. The 180 individuals who were sent the questionnaires were selected with the cooperation of the school supervisor. Questionnaires not returned within two weeks were pursued by sending a follow-up letter. 42% of the sample returned the questionnaires. 36% of the questionnaires were utilized in the final analysis. Returned questionnaires were rejected from analysis if they were incomplete or if the respondent failed to follow the directions.

Final Analysis

The demographic information on the respondent population is presented in Table 3. The most frequently occurring responses in the demographic categories included: Masters degree in education, 55%; no additional certifications, 66%; position of classroom teacher, 83%; ages 26-30, 53%; female, 94%; and normal hearing status, 89%.

Table 3
Data on Demographic Variables

Variable		Absolute Frequency	Relative Frequency
Education	Bachelors	28	44%
	Masters	35	55%
	Other	1	1%
Certification	Regular Education	7	11%
	Special Education	21	33%
	None	36	66%
Position	Classroom Teacher	53	83%
	Resource Room Teacher	3	5%
	Itinerant Teacher	2	3%
	Other	6	9%
Age	21-25	7	11%
	26-30	34	53%
	31-35	14	22%
	Other	9	14%
Sex	Male	4	6%
	Female	60	94%
Hearing Status	Normal	57	89%
	Hard of Hearing	5	8%
	Deaf	2	3%
		<i>M</i>	<i>σ</i>
Years as an Educator		7.219	4.600
Years as an Educator with Multihandicapped Hearing Impaired		6.569	3.413

N=64

The mean number of years as an educator was 7.219 with a standard deviation of 4.600 years. The mean number of years as an educator with the hearing impaired multihandicapped population was 5.469 with a standard deviation of 3.413 years. The means and standard deviations of the questions in the final study are presented in Table 4. The subareas of language development and hearing impairment were retained in the final analysis because they did present variability as did the subareas of working with teacher aides and working with consultants. The canonical correlation analyses results are presented in Table 5. Comparison of the significance levels to .0125 for the four separate analyses found no significant canonical correlations. There was not sufficient evidence to indicate a relationship between an individual's expertise development or educational background and that individual's feelings of importance of particular subareas in the four main topics. The proposed null hypotheses were therefore accepted. The null hypotheses included:

Ho¹: There is no association between the two scales, expertise development and relevance to successful classroom management in the area of child development.

Ho²: There is no association between the two scales, expertise development and relevance to successful

Table 4
Means and Standard Deviations

Variable	Expertise		Classroom Management	
	<i>M</i>	<i>σ</i>	<i>M</i>	<i>σ</i>
Language Development	1.234	(0.707)	2.266	(1.260)
Cognitive Development	1.297	(0.770)	2.320	(1.013)
Emotional Development	2.344	(1.428)	2.539	(1.186)
Motoric Development	1.891	(1.223)	3.789	(1.281)
Social Development	2.641	(1.407)	4.023	(1.242)
Hearing Impairment	1.359	(0.949)	1.906	(1.397)
Learning Disabilities	1.891	(1.261)	3.406	(1.522)
Physical Impairment	2.297	(1.330)	4.789	(1.422)
Mental Retardation	2.016	(1.386)	3.703	(1.490)
Emotional Disturbance	2.297	(1.466)	3.094	(1.734)
Visual Impairment	2.172	(1.375)	4.758	(1.616)
Health Impairment	2.609	(1.364)	6.234	(1.411)
Diagnostic Procedures	1.797	(1.157)	2.703	(1.965)
Curriculum Planning	2.297	(1.341)	3.391	(1.724)
Writing Objectives	1.734	(1.144)	4.297	(1.353)
Behavior Modification	1.828	(1.121)	3.469	(1.563)
Individualized Instruction	2.469	(1.321)	2.578	(1.401)
Record Keeping	3.062	(1.271)	6.047	(1.090)
Making Materials	2.891	(1.347)	5.484	(1.613)
Working with Parents	3.250	(1.195)	2.063	(1.125)
Working with Other Teachers	3.656	(0.895)	2.547	(1.308)
Working with Teacher Aides	3.812	(0.639)	2.844	(1.606)
Working with Consultants	3.750	(0.756)	4.000	(0.976)
Working with Administrators	3.859	(0.587)	3.875	(1.431)
Working with Student Teachers	3.812	(0.639)	5.656	(0.781)

Table 5
Canonical Correlations

Variable	1st Canonical Coefficients for Expertise	1st Canonical Coefficients for Classroom Management	Canonical Correlation	Significance
Language development	-.041	-.124		
Cognitive development	.631	.506		
Emotional development	.774	.247	.440	.404
Motoric development	.404	.082		
Social/Sexual development	-.385	1.103		
Hearing Impairment	-.099	.065		
Learning Disabilities	-.895	-.560		
Physical Impairment	-.358	.023		
Mental Retardation	.184	-.020	.538	.598
Emotional Disturbance	.622	.220		
Visual Impairment	.410	.838		
Health Impairment	.093	.138		
Diagnostic Procedures	-.098	.530		
Curriculum Planning	.746	.329		
Writing Objectives	.040	-.208		
Behavior Modification	-.148	.238	.532	.280
Individual Instruction	-.193	.094		
Record Keeping	.635	-.662		
Making Materials	-.534	.326		
Working with Parents	-.410	6.561		
Working with Other Teachers	-.152	7.510		
Working with Teacher Aides	-1.170	9.540	.630	.062
Working with Consultants	1.599	5.569		
Working with Administrators	.054	8.842		
Working with Student Teachers	.213	4.689		

N=64

classroom management, in the area of handicapping conditions.

Ho³: There is no association between the two scales, expertise development and relevance to successful classroom management, in the area of classroom management.

Ho⁴: There is no association between the two scales, expertise development and relevance to successful classroom management, in the area of interpersonal relations.

The coefficient of concordance tests were then run to measure the agreement between rankings within the final study respondent population. The coefficients of concordance are presented in Table 6. There was no significant disagreement among the rankings of the respondent population or the respondent population were all in relative agreement as to the importance of subareas in the four topics of child development, handicapping conditions, classroom management, and interpersonal relations.

Table 6
Coefficients of Concordance

Variable	Mean Rank	Coefficient of Concordance W	Significance
Language Development	2.27		
Cognitive Development	2.33		
Emotional Development	2.55	.291	.000
Motoric Development	3.80		
Social/Sexual Development	4.04		
Hearing Impairment	1.91		
Learning Disabilities	3.41		
Physical Impairment	4.81		
Mental Retardation	3.73	.430	.000
Emotional Disturbance	3.11		
Visual Impairment	4.77		
Health Impairment	6.27		
Diagnostic Procedures	2.70		
Curriculum Planning	3.39		
Writing Objectives	4.30		
Behavior Modification	3.47	.397	.000
Individualized Instruction	2.58		
Record Keeping	6.06		
Making Materials	5.49		
Working with Parents	2.06		
Working with Other Teachers	2.55		
Working with Teacher Aides	2.84	.482	.000
Working with Consultants	4.01		
Working with Administrators	3.88		
Working with Student Teachers	5.66		

CHAPTER V

Summary and Conclusions

Failure to establish a significant relationship between the classroom management rankings and expertise does not necessarily imply these relationships don't exist. Difficulty may have stemmed from a relatively small sample size ($n=64$) or the number of subareas to rank. Respondents may not have made clearcut distinctions in some of the subareas such as social and emotional development. Ranking the subareas may have been difficult if the respondent felt the areas were equally important. In fact, the majority of the rejected questionnaires were not utilized because the respondents ranked many subareas of equal importance. Comments from the respondents on the returned questionnaires suggested that if a subarea under each of the main topic areas was mentioned in a formal course, respondents indicated that their expertise was developed in this manner without regard to the magnitude and/or quality of the course. The significance levels computed in the pilot analysis may have been due to one or two extreme data points. Hence, the indicated relationships may have been due to one or two respondents and are not indicative of the parent population. Also,

the field test sample came from one geographic area and therefore may share common philosophies which influenced their answers. Since there was some question as to the magnitude and/or quality of information presented in formal courses for the development of expertise in the subareas, the foremost suggestion for further research would be to further investigate the nature of formal coursework and its usefulness to the respondents. This, coupled with the information that on the subareas respondents were acquiring expertise on their own, would give confirmation to the program of preparation required by teachers of the multihandicapped hearing impaired. Other research suggestions came from the respondents themselves. These included studying the elementary as opposed to secondary populations and studying the administrators of this population and comparing their responses to the classroom teachers. Almost every questionnaire contained personal comments from the respondent indicating among other things the accuracy of the subareas selected or the frustration at the lack of in-depth preparation at the college level. In summary, it appears to be evident that this teacher population, while in agreement on the importance of subareas within the framework of child development, handicapping conditions, classroom management, and interpersonal relations, encompassed these philosophies

primarily on their own. It also seems to indicate that college courses recognize the various issues involved in the education of the hearing impaired multihandicapped student but need to increase the depth and scope of coverage in these areas to promote proficiency before the teacher reaches the classroom.

APPENDICES

6003 Abrams, #2034
Dallas, Texas 75231
May 18, 1981

Dear Administrator:

As an administrator for a program which serves multihandicapped hearing impaired students, I know you are aware of the need for teacher training programs to prepare staff members to work with this special population.

Accompanying this letter are questionnaires which endeavor to determine which areas of expertise teachers of multihandicapped deaf students feel are relevant to the successful management of these unique classrooms. It is anticipated that this information will be able to provide insight as to the critical needs of teachers working with these special students.

I would most appreciate your selection of four teachers of the multihandicapped hearing impaired who you feel would best be able to provide the kind of information asked for on the questionnaire.

Also enclosed are self-addressed, stamped envelopes for your teachers' convenience in returning the questionnaires as soon as possible, as well as a copy of the questionnaire for your information.

Thank you for your cooperation.

Sincerely,

Althea K. Schoenfelt
Doctoral Student
Texas Woman's University

k
Enclosure

6003 Abrams, #2034
Dallas, Texas 75231
May 18, 1981

Dear Teacher of Multihandicapped Hearing Impaired Students:

The accompanying questionnaire endeavors to determine which areas of expertise teachers of multihandicapped deaf students feel are relevant to the successful management of these unique classrooms. Since you are working daily with hearing impaired multihandicapped students in a classroom situation, your opinions on this subject are invaluable.

Your responses to this survey will have great implications for the planning and development of programs designed to train teachers of the multihandicapped deaf and will be given careful attention.

Please take the time very soon--immediately, if you can--to complete the accompanying questionnaire. Let me thank you in advance for taking the time to answer. Your responses will be eagerly awaited.

No medical service or compensation is provided to subjects by the university as a result of injury from participation in research.

Sincerely,

Althea K. Schoenfeldt, M.S.
Doctoral Student
Texas Woman's University,
Dallas, Texas

I UNDERSTANDING THAT MY RETURN OF THIS QUESTIONNAIRE
CONSTITUTES MY INFORMED CONSENT TO ACT AS A SUBJECT IN
THIS RESEARCH. I understand my participation is voluntary and that I may withdraw at any time.

TEACHER QUESTIONNAIRE

This questionnaire provides information on the training of teachers working with multihandicapped deaf students. Your responses are most important and will be given immediate attention. Confidentiality is assured. After completing the questionnaire, return it in the envelope provided. Thank you for your cooperation.

1. Check the space indicating the highest level of education you have achieved.

<input type="checkbox"/>	Bachelors	<input type="checkbox"/>	Doctorate
<input type="checkbox"/>	Masters	<input type="checkbox"/>	Others _____
			please specify

2. Specify the degrees and/or certifications you have presently completed.

3. How many years have you worked as a professional educator, both in regular and special education?

_____ Number of years

4. How many years have you worked with hearing impaired multihandicapped students as a professional educator?

_____ Number of years

5. What is your present position in the school program?

<input type="checkbox"/>	Classroom teacher	<input type="checkbox"/>	Itinerant teacher
<input type="checkbox"/>	Resource room teacher	<input type="checkbox"/>	Other _____
			please specify

C. CLASSROOM MANAGEMENT:

1. Diagnostic Procedures and Evaluations _____
2. Curriculum Planning _____
3. Writing Objectives _____
4. Behavior Modification _____
5. Individualized Instruction _____
6. Record Keeping _____
7. Making Materials _____
8. Other _____

please specify

D. INTERPERSONAL RELATIONS:

1. Working with parents _____
2. Working with a team teacher _____
3. Working with teacher aides _____
4. Working with consultants _____
5. Other _____

please specify

10. Please rank from 1 to 5 (where 1 indicates this area is the most important) the following areas of child development as knowledge in these areas relates to the successful management of a classroom for multihandicapped deaf students. Should you wish to include an additional area of child development, fill in the blank marked "Other" and include in your numerical ranking (i.e., from 1 to 6).

- A. Language Development _____
- B. Cognitive Development _____
- C. Emotional Development _____
- D. Social Development _____
- E. Motoric Development _____
- F. Other _____

please specify

11. Please rank from 1 to 7 (where 1 indicates this category is the most important) the following categories of handicapping conditions as knowledge in these categories relates to the successful management of a classroom for multihandicapped deaf students. Should you wish to include an additional category, fill in the blank marked "Other" and include in your numerical ranking (i.e., from 1 to 8).

- A. Hearing Impairment _____
- B. Learning Disabilities _____
- C. Physical Impairment _____
- D. Mental Retardation _____
- E. Emotional Disturbance _____

14. Please indicate any additional comments and/or suggestions you may have in the space provided below. Further comments may be attached on a separate sheet.

Thank you for your interest and cooperation. If you would like a copy of the results of this research, please indicate by checking the appropriate space below.

Yes _____

No _____

Table A
Frequencies of Expertise Development Responses

Variable	Absolute Frequency				Relative Frequency			
	Rank				Rank			
	1	2	3	4	1	2	3	4
Language Development	56	4	1	3	87.5	6.3	1.6	4.7
Cognitive Development	54	4	3	3	84.4	6.3	4.7	4.7
Emotional Development	32	3	4	25	50.0	4.7	6.3	39.1
Motoric Development	38	8	5	13	59.4	12.5	7.8	20.3
Social/Sexual Development	25	3	6	30	39.1	4.7	9.4	46.9
Hearing Impairment	55	2		7	85.9	3.1		10.9
Learning Disabilities	41	2	8	13	64.1	3.1	12.5	20.3
Physical Impairment	29	7	8	20	45.3	10.9	12.5	31.3
Mental Retardation	41		4	19	64.1		6.3	29.7
Emotional Disturbance	35	1	2	26	54.7	1.6	3.1	40.6
Visual Impairment	35	3	6	20	54.7	4.7	9.4	31.3
Health Impairment	23	7	6	28	35.9	10.9	9.4	43.8
Diagnostic Procedures	40	7	7	10	62.5	10.9	10.9	15.6
Curriculum Planning	29	8	6	21	45.3	12.5	9.4	32.8
Writing Objectives	41	10	2	11	64.1	15.6	3.1	17.2
Behavior Modification	37	10	8	9	57.8	15.6	12.5	14.1
Individualized Instruction	23	12	5	24	35.9	18.8	7.8	37.5
Record Keeping	15	4	7	38	23.4	6.3	10.9	59.4
Making Materials	19	4	6	35	29.7	6.3	9.4	54.7
Working with Parents	12	3	6	43	18.8	4.7	9.4	67.2
Working with Other Teachers	5	3	1	55	7.8	4.7	1.6	85.9
Working with Teacher Aides	2	2	2	58	3.1	3.1	3.1	90.6
Working with Consultants	3	3	1	57	4.7	4.7	1.6	89.1
Working with Administrators	2	1	1	60	3.1	1.6	1.6	93.8
Working with Student Teachers	2	2	2	58	3.1	3.1	3.1	90.6

N=64

Table B
Frequencies of Classroom Management Responses

Variable	Absolute Frequency							Relative Frequency						
	Rank							Rank						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Language Development	26	12	13	10	3			40.6	18.8	20.3	15.6	4.7		
Cognitive Development	17	18	22	6	1			26.6	28.1	34.4	9.4	1.6		
Emotional Development	15	18	17	10	4			23.4	28.1	26.6	15.6	6.3		
Motoric Development	5	8	6	22	23			7.8	12.5	9.4	34.4	35.9		
Social/Sexual Development	4	6	6	17	31			6.3	9.4	9.4	26.6	48.4		
Hearing Impairment	39	10	5	4	5	1		60.9	15.6	7.8	6.3	7.8	1.6	
Learning Disabilities	6	12	22	9	7	6	2	9.4	18.8	34.4	14.1	10.9	9.4	3.1
Physical Impairment	1	5	6	9	22	16	5	1.6	7.8	9.4	14.1	34.4	25.0	7.8
Mental Retardation	4	15	6	18	15	5	1	6.3	23.4	9.4	28.1	23.4	7.8	1.6
Emotional Disturbance	13	14	17	6	3	10	1	20.3	21.9	26.6	9.4	4.7	15.6	1.6
Visual Impairment	1	8	5	11	14	17	8	1.6	12.5	7.8	17.2	21.9	26.6	12.5
Health Impairment	1	1	2	6	2	8	44	1.6	1.6	3.1	9.4	3.1	12.5	68.8
Diagnostic Procedures	28	9	7	6	5	6	3	43.8	14.1	10.9	9.4	7.8	9.4	4.7
Curriculum Planning	8	15	13	14	5	4	5	12.5	23.4	20.3	21.9	7.8	6.3	7.8
Writing Objectives	1	5	13	14	20	8	3	1.6	7.8	20.3	21.9	31.3	12.5	4.7
Behavior Modification	7	13	12	15	11	4	2	10.9	20.3	18.8	23.4	17.2	6.3	3.1
Individualized Instruction	18	16	14	9	5	2		28.1	25.0	21.9	14.1	7.8	3.1	
Record Keeping			3	4	6	25	26			4.7	6.3	9.4	39.1	40.6
Making Materials	1	5	1	8	12	14	23	1.6	7.8	1.6	12.5	18.8	21.9	35.9
Working with Parents	26	17	14	6		1		40.6	26.6	21.9	9.4		1.6	
Working with Other Teachers	16	20	12	9	7			25.0	31.3	18.8	14.1	10.9		
Working with Teacher Aides	18	13	11	8	11	3		28.1	20.3	17.2	12.5	17.2	4.7	
Working with Consultants		4	16	22	20	2			6.3	25.0	34.4	31.3	3.1	
Working with Administrators	4	9	10	17	16	8		6.3	14.1	15.6	26.6	25.0	12.5	
Working with Student Teachers			1	1	3	9	50			1.6	1.6	4.7	14.1	78.1

N=64

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