7-1-1989

A Comparision of the Achievement of Deaf Children with Deaf Parents and Deaf Siblings and Deaf Children with Hearing Parents and Hearing Siblings at the Iowa School for the Deaf

Sharon Kay Crawford Hovinga
University of Nebraska at Omaha

A Comparision of the Achievement of Deaf Children with Deaf Parents and Deaf Siblings and Deaf Children with Hearing Parents and Hearing Siblings at the Iowa School for the Deaf

A Field Project
Presented to the
Department of Educational Administration and Supervision
and the
Faculty of the Graduate College
University of Nebraska

in Partial Fulfillment of
the Requirements for the Degree
Educational Specialist
University of Nebraska at Omaha

by
Sharon Kay Crawford Hovinga
July 1989

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

FIELD PROJECT ACCEPTANCE

Acceptance for the faculty of the Graduate College, University of Nebraska, in partial fulfillment of the requirements for the degree Educational Specialist, University of Nebraska at Omaha.

Committee

Name	Department
Elaine E Ward	Ed Admin
Thomas Petzil	Ed Admin + Supervision
Edward F Conway	Spec. Educ. + Com. Disorders

Elaine E Ward
Chairman

Aug 2, 1989
Date

TABLE OF CONTENTS

CHAPTER ONE

Introduction

Several studies conducted over the past twenty years, using a variety of standardized tests such as the Stanford Achievement Test (revised for the Hearing Impaired-SAT-HI), the Wechsler Intelligence Scale for Children (WISC), the Wechsler Adult Intelligence Scale (WAIS), and the Leiter International Performance Scale have suggested that there is a significant difference in the language, spelling, and reading achievement of deaf children of deaf parents over deaf children of hearing parents. This may no longer be true basically because of the increase in sign usage within the school system and the home.

A marked increase in the number of sign language classes being offered in colleges and through residential schools or adult education programs throughout the country has resulted in an increased number of opportunities for hearing parents of deaf children to take sign language classes and thus use sign language within the home for the simple reason that more classes are available which will fit in with the family's schedule and proximity. Indeed, there are even entire families taking classes so that sign language is used more as a mode of communication when the deaf child is present than ever before. Brasel and Quigley (1977) cite several studies reporting significant differences in educational achievement and language development in favor of early exposure to manual communication. Bodner-Johnson (1985) and

Zwiebel (1987) have found that children do better in reading when parents use manual communication with them at an early age.

More residential schools for the deaf are requiring teachers to take sign language proficiency tests and if they rate unsatisfactory, are further requiring that they take sign language classes, which could only result in an improvement in the quality of sign language being used within classrooms.

There is reason to believe that this increased amount of manual communication should greatly influence the achievement of those deaf children who do not have deaf parents.

An extensive review of research examining factors that may or may not influence achievement test results of deaf children was conducted. The material indicates that there is a great deal of complexity involved in measuring factors influencing achievement of deaf students.

Statement of the Problem:

Is there a significant difference in achievement test scores of deaf children with deaf parents and deaf siblings compared to deaf children who have hearing parents and hearing siblings?

Statement of the Hypothesis:

There is a significant difference in achievement test scores of deaf children with deaf parents and deaf siblings compared to deaf children who have hearing parents and hearing siblings.

Significance of the Study:

If this study finds the above hypothesis to be true, then the study would be of value to several segments of the population:

1. Sign language teachers would have a basis for arguing that hearing parents, siblings, and peers of deaf children should learn sign language not only to communicate with these children, but also to raise the achievement level of these children.
2. Evidence supporting the hypothesis would also lend much credence to many schools' philosophy that total communication is the best method of instructing deaf children...that the inclusion of sign language raises the comprehension and thus the achievement level of these same children.
3. The study would provide strong rationale for support of the current trend in residential schools to upgrade the sign language skills of staff working with deaf children, deaf parents, and the deaf community at large.

Assumptions:

It is very difficult to determine exactly what factors motivate deaf children to do better on achievement tests. It is assumed that with matched samples, the following variables will balance out:

1. Age at onset of deafness.
2. Degree of hearing loss.
3. Presence or absence of additional handicapping conditions.
4. Quality of/frequency of use of sign language by teachers the deaf child has had prior to testing.
5. Same level of tests given.
6. Test taken at approximately the same age.
7. "Guess factor" when the answer is not known.

8. Effect of socio-economic status on achievement test scores.

Limitations:

Inherent in this research are the following limitations:

Limitation 1: For purposes of this study, only children at the Iowa School for the Deaf will constitute the testing subjects, thus the study sample is relatively geographically limited to one state institution.

Limitation 2: Although the number of students attending Iowa School for the Deaf is above average for schools for the deaf in America, the number of subjects studied is too small to make a generalization of the findings of the study and their application to other schools.

Definition of Terms:

For purposes of this specific study, definition of the following terms will be construed as such:

1. Manual Communication- "any method of communication in which signs or fingerspelling are used." (Brasel and Quigley 1975)
2. Deaf-Indicates a person with a hearing loss. In this study, only subjects with a loss of 65 decibels (dB) or greater were used. All of the deaf parents/deaf siblings subjects in the final study were hereditarily deaf. In some studies, Deaf is used to define those persons with a hearing loss who function within a specific culture. No such distinction is implied in this study, although all of the Deaf parents in the final matched groups of this study would be termed culturally Deaf in studies using the term for that

purpose.

3. American Sign Language (ASL) - "the idiomatic language of signs, the form of manual communication commonly used by the large number of deaf persons who have inadequate syntactic skills" (Brasel & Quigley 1975).

4. Culturally deaf- refers to a subculture of the deaf community in which deaf persons have attended residential schools for the deaf and subscribe to the values of this culture and its use of American Sign Language as a native language.

5. Total Communication- "incorporates fingerspelling, speech, speechreading, and auditory amplification with no one communication method being favored to the exclusion of others" (Brasel and Quigley 1975).

CHAPTER TWO

Review of Related Research and Literature

While earlier studies support the theory that deaf children of deaf parents score higher than do deaf children of hearing parents on some selected subtests of the Stanford Achievement test (reading comprehension, spelling, and language), later studies done on this subject indicate that numerous other variables may be influential factors on achievement test results.

Over the past several years, studies completed have lent credence to the theory that deaf children of deaf parents achieve better than deaf children of hearing parents simply because they start manual communication earlier and therefore "visualize" this abstract language they do not auditorily perceive. (Vernon & Koh 1970; Brasel & Quigley 1975, 1977; Bockmiller 1981; Bodner-Johnson 1985).

Birch and Stuckless (1964) studied 105 deaf children of deaf parents and 337 deaf children of hearing parents. The results of their study indicated that in reading ability and written language tests, exposure to early manual communication was a factor in the much higher scores of these children over those deaf children that had no early manual communication. Thus the conclusion was drawn that early exposure to manual communication results in a higher development of language skills.

Vernon and Soon (1970) espouse the value of early manual communication as being very much an influencing factor on achievement scores of deaf children.

The Office of Demographic Studies at Gallaudet has compiled four research studies (Buchanan 1973) in which 17,000 students were tested on two subtests of the Stanford Achievement Test. The relationship of the hearing status of the parents of these students and achievement test scores on the Paragraph Meaning and Arithmetic Computation subtests was analyzed. It was pointed out that it is very difficult to determine whether or not hearing status of the parent is a significantly influencing factor on the test scores of these students as the study addressed at least nine variables.

Buchanan's study was later reinforced by research conducted by Kusche, Greenberg, and Garfield (1983) and Gee and Goodhardt (1985), who found that there are too many variables to determine if parental hearing status is really the factor that makes a significant difference in language and reading skills of deaf children.

Brasel and Quigley (1975) did a study of 72 students, dividing the parents into four groups: (1) deaf parents with high English skills; (2) deaf parents with low English skills who used manual communication with their child; (3) oral deaf students whose hearing parents had intensive training in using oral methods (no manual communication); and (4) hearing parents who had no training in using oral methods of communication. The study concluded that the children of the manual deaf parents who had high English skills scored significantly higher on all four subtests of the Stanford Achievement Test than did the children in

the other groups. The study also concluded that the children of the combined deaf parents outperformed the children of combined hearing parents.

Bockmiller (1981) suggested that we view American Sign Language as a language separate from, but not substandard to, English. She examined the development of language of those children born to deaf parents as opposed to the development of language of those children born to hearing parents. Her study urges the teaching of English as a second language to deaf children who communicate in American Sign Language, employing teaching strategies similar to those used in bilingual education.

Serwatka and Fetsko's study (1983) at the Florida School for the Deaf of ten deaf children with deaf parents and ten deaf children with hearing parents indicated that deaf children with deaf parents performed "significantly better on the spelling subtest" of the Stanford Achievement Test, but not on the math subtest. These two areas were chosen because they "appeared to be least related to abstract language". The higher achievement was attributed to "parenting practices of deaf parents of deaf children (acceptance of the child's deafness, time devoted to parenting, provision of a role model (deaf parent) leading to higher self-esteem for the child, and amount of communication between parent and child". (p. 10-11) In essence, they argue that spelling and math are low in semantic and syntactic content and the higher spelling achievement may not be due to early exposure to sign language as indicated by earlier studies, but may

be due to parenting practices of deaf parents. They indicated a need for more study to determine just which practice was the most influential on achievement outcomes.

Kusche, Greenberg, and Garfield (1983) found that it was more complex to make a determination on the achievement difference with the use of sign language at an early age than it apparently has been in past studies because of the discovery that there are "relationships between nonverbal intelligence, verbal achievement, hereditary variables, and environmental variables (early exposure to sign language)." (p.466)

Gee and Goodhart (1985) examined the acquisition of language by both groups of deaf children and discovered there are more complexities in determining influencing factors on language development that were not discussed in earlier studies and these factors may affect test results significantly. Some of the complexities they identified are: "nativization" (first and second language acquisition), the fact that signing is slower than speech, analysis of the quality and quantity of signing of hearing parents, and the biological capacity for language.

Bodner-Johnson (1985), in examining family dynamics, found that specific family behaviors such as acceptance of deafness, adaptation of the family (including the use of sign language and interaction with the deaf community), and press for achievement (higher expectations and reinforcement) increased reading comprehension scores.

Her subsequent study in 1986 also found that "those students who did well in reading had families who, to a greater degree than families of low reading children, integrated the deaf child into the family and had high educational expectations for their children." (p.447) She again pointed out the influence of family practices (adaptation to deafness and press for achievement) on reading scores.

Kampfe and Turecheck's study (1987) was one of the few that found no relationship between reading skills and parental method of communication, regardless of the hearing status of the parent.

Hoffmeister and Moores (1987) discuss code switching skills in prelingually deaf adults of deaf parents who used American Sign Language (ASL). It was found that those born of deaf parents who used ASL were more likely later in life to sign in English segments, while those with hearing parents tended to sign in ASL. Although this study was adult-oriented, it does lend credence to the theory of many studies that deaf children of deaf parents will achieve better in the language area than those of hearing parents.

In recent years, there has been a tremendous increase in exposure of deaf children to language via captioned television and increased teacher/parental/sibling use of sign language; thus this study seeks to determine if parental/sibling hearing status really is a variable and if there is a significant difference between the two groups of deaf children in reading, language, and spelling subtest results on the Stanford Achievement Test, based on the theory that deaf children of deaf parents with deaf siblings

(DCDPDS) would be exposed to such a climate much more and much earlier than deaf children of hearing parents with hearing siblings (DCHPHS). This study differs from earlier studies in that it includes a confounding variable, siblings, whose signing skills may affect test results.

This study further seeks to compare DCDPDS and DCHPHS at both the elementary and secondary levels on the premise that DCHPHS in the elementary group will have been more exposed to the aforementioned variables than DCHPHS in the secondary group due to increased exposure having occurred within the last decade, making the difference less significant in the younger group.

CHAPTER THREE

Design of the Study

Description of the Population and Sample

Four (4) elementary DCDPDS and four (4) elementary DCHPHS subjects from the Iowa School for the Deaf constitute the final population of this study.

Description of the Study Design

This study differs from others done in the past in that a confounding variable (siblings) is introduced.

Originally, the study was designed to divide the subjects into two comparison groups, elementary (K-6) and secondary (7-12) grades, to determine if there was a significant difference in achievement of either group between the two age levels, operating on the theory that older students would have been more exposed to these variables that may affect language development: reading captions on t.v., use of interpreters, and increased number of sign language classes, resulting in increased manual communication between the child and teachers/parents/siblings.

Because of elimination of secondary subjects due to one or more of the variables listed previously, there was an inadequate number of matched subjects in the secondary group to constitute a comparison study.

As a result of the total elimination process due to variables listed later in this chapter , the elementary group contained only four (4) DCDPDS and four (4) DCHPHS subjects.

Data Gathering Instruments

Data for this study was extracted from performance summaries of the following tests administered at Iowa School for the Deaf: Verbal, performance (with deaf norms), and full scale portions of the Wechsler Intelligence Scale for Children (revised), Wechsler Adult Intelligence Scale (revised), 1979 Leiter International Performance Scale (revised standards), and 1982 Stanford Achievement Test (revised), Form E, Seventh (7th) Edition.

To ensure as even an initial match of the two groups as possible, only the performance portion of the Wechsler was used in this study. With deaf children, performance tests are a better indicator of overall ability, since with a hearing loss, verbal tests can be considered inaccurate and even invalid. In the absence of a Wechsler score, the Leiter scores were used. Regardless of which was used, paired subjects had the same test. Matched pairing was reinforced for final subjects, using scaled scores on the Stanford Achievement Test.

Data Processing and Categorization Procedures

One hundred thirty-eight (138) student records at Iowa School for the Deaf were reviewed. One hundred twenty-three (123) students attended the school during the 1988-89 school year, seven (7) students attended during the 1987-88 school year, and eight (8) students attended during the 1986-87 school year.

Twenty-eight (28) students were identified as having at least one deaf parent. However, to keep the study as pure as possible, children of mixed marriages (both deaf and hearing

parents) or having mixed (hearing and deaf) siblings were eliminated from the study.

Seven (7) subjects were eliminated because they had mixed parents.

Five (5) subjects with deaf parents were eliminated because they had hearing siblings.

Of the subjects with hearing parents, seventeen (17) were eliminated because they had deaf siblings.

Two (2) subjects were eliminated because they were foreign exchange students.

One (1) subject was eliminated because parental hearing status was unknown (adopted at a later age). The other adopted children were already eliminated because of a mixture of deaf/hearing parents/siblings.

Subjects were further eliminated from the study due to one or more of the following extraneous variables: (1) they had less than a 65 dB hearing loss; (2) the onset of deafness occurred after the age of two; (3) they had other handicaps severe enough to affect results of the performance or intelligence tests; or (4) they attained a score lower than 85 on the performance scale of the Wechsler Intelligence Scale for Children (Revised) or the Wechsler Adult Intelligence Scale (Revised). In the absence of Wechsler scores, scores on the 1979 Leiter International Performance Scale (revised standards) were used.

This process of elimination resulted in only eight (8) DCDPDS subjects and eleven (11) DCHPHS subjects for group comparison purposes.

Pairing of the DCDPDS and DCHPHS groups was based on: (1) pairs having taken the Wechsler Intelligence Scale for Children or the 1979 Leiter International Performance Scale (revised) at approximately the same time, with scores being not more than ten (10) points difference, (2) hearing loss being not more than 10 (ten) dB difference, and (3) date of birth being not more than one (1) year apart.

One DCDPDS subject was eliminated because a match within ten (10) points on the Wechsler test was not available, decreasing the two (2) groups to pairs of seven (7) each.

In the DCDPDS group, the mean dB loss of the subjects was 92.85, average onset of deafness was birth and the mean score on the Wechsler Intelligence Scale for Children (revised) was 121.1, with deaf norms averaging 121.1. The mean age at which the test was taken was 7 years and 8 months.

In the DCHPHS group, the mean dB loss of the subjects was 101.42, a difference of 8.57 decibels. Average onset of deafness was 8.2 months as compared with birth in the DCDPDS group. The mean score on the Wechsler Intelligence Scale for Children (revised) was 112.71 using deaf norms, a difference of 8.43. The mean age of the subjects at the time the test was taken was seven (7) years and eight (8) months, the same as the DCDPDS group. (See table 1)

Table 1
Children of Deaf Parents/Deaf Siblings vs. Children of Hearing Parents/Hearing Siblings in Hearing Loss, Onset of Loss, Wechsler Scores and Test Age

	Avg. dB loss	Onset	Weschler/Deaf Norm	Test Age
DPDS	92.85 dB	birth	121.10	7 yrs. 8 mo.
HPHS	101.42 dB	8.2 mo	112.71	7 yrs. 8 mo.
Difference	8.57 dB	8.2 mo	8.39	none

The two groups were then paired by results of the 1982 Stanford Achievement Test (revised), Form E, Seventh (7th) Edition.

One (1) subject with deaf parents and deaf siblings (DCDPDS) was eliminated because he had not taken the SAT test.

One (1) subject with deaf parents was eliminated because there was no matching subject with hearing parents who had taken the SAT test.

One (1) subject with deaf parents was eliminated because upon matching the SAT scaled scores, the previous match with hearing parents did not take the same level SAT test and there was no other match available, narrowing the sample to four (4) DCDPDS and four (4) DCHPHS subjects.

CHAPTER FOUR

Presentation and Analysis of Data

In order to test if previously set criteria had been met (not more than ten dB difference in hearing loss, onset of deafness before the age of two, and not more than one year difference in test age), average dB loss, onset of deafness, and test age were re-calculated on the basis of elimination of the previous three subjects. Following are the statistics for four DCDPDS and four DCHPHS subjects:

Table 2
Mean Hearing Loss, Onset, and Weschler Test Age of Final Subjects

	Avg. dB loss	Onset	Wechsler Test Age
DPDS	90 dB	birth	9 yrs 00 mo
HPHS	100 dB	11.25 mo	8 yrs 10 mo
Difference	0 dB	11.25 mo	0 yrs 02 mo

For original purposes of this study, the word reading, reading comprehension, spelling, and language subtest scores for all 138 subjects had been extracted from the performance summaries on the 1982 Revised Stanford Achievement Test (Form E, 7th Edition). However, only the word recognition and reading comprehension subtest scores were used.

Three of the DCDPDS subjects and two of the DCHPHS subjects did not take the spelling subtest of the SAT. Thus the study does not use statistics from this portion of the SAT.

The elementary students used in the final sample did not take the language subtest, so these statistics also are not of value to this study.

Performance grades using hearing norms were recorded as were the hearing impaired percentile. For purposes of the Stanford Achievement Test (SAT) comparison study, scaled scores were used in calculating the mean of the two groups of four.

The mean age at the time the test was taken was nine (9) years and four (4) months for the DCDPDS group and ten (10) years and eight (8) months for the DCHPHS group, a difference of sixteen (16) months. These are illustrated in table 3.

Table 3
Word Recognition, Reading Comprehension, and SAT Test Age Scaled Scores

	Word Recognition Mean	Reading Comprehension Mean	SAT Test Age Mean
DPDS	541.25	511.00	9 yr 4 mo
HPHS	562.25	532.75	10 yr 8 mo
Difference	21.00	21.75	16 mo

In the descriptive data analysis, the standard deviation of the two groups (DCDPDS/DCHPHS) was calculated, using both the raw score method and the deviation score method.

In the reading comprehension subtest of the SAT, the standard deviation was 36.92 for the DCDPDS group and 66.98 for the DCHPHS group, a difference of 30.06.

The word recognition subtest of the SAT produced a standard deviation of 47.73 for the DCDPDS group and 57.15 for the DCHPHS group, a difference of 9.42, as shown in table 4.

Table 4
Standard Deviation on SAT Subtests (Raw/Deviation Scores)

Reading Comprehension:	DPDS	36.92
	HPHS	66.98
	Difference	30.06
Word Recognition:	DPDS	47.73
	HPHS	57.15
	Difference	9.42

During the inferential data analysis, testing was done to determine the significance of the means of the control (DCDPDS) group and the experimental (DCHPHS) group, utilizing the t-test.

In reading comprehension, the score was 4.27 and in word recognition, the score was 4.10 as depicted in table 5 below.

Table 5
Significance of the Means (t-test)

Reading Comprehension:	4.27
Word Recognition:	4.10

df of 2 P >.05

A check was also run to rule out the sampling errors (denominator higher than numerator) factor.

Using a "critical values of student's distribution (t)" chart, allowing for the degree of freedom <number of subjects (4) minus the number of groups (2)>, the level of significance would be 4.303, using a two-tailed test.

Since the t-test scores were 4.27 in reading comprehension and 4.10 in word recognition, there was no significant difference in the performance of the two groups. Since there was no significant difference, the hypothesis is rejected.

CHAPTER FIVE

Summary, Conclusion, and Recommendations

Summary

Although early research indicated that children of deaf parents achieved better than children of hearing parents, later research attempted to find out why they achieved better, if they did.

Variables such as parenting practices, parental adaptation, early exposure to sign language, press for achievement, etc. have emerged as also being influential in the achievement of deaf children, clouding the issue of whether or not parental hearing status really makes a difference when all over variables are equal.

Conclusion

The hypothesis was that there would be a significant difference in the achievement test scores of DCDPDS as compared to DCHPHS.

In this study, no significant difference was found, but this may not be a true indicator of larger population samples. The study did not address what variables other than having deaf siblings would account for the difference, if a difference was present.

Recommendations for future research

Persons wishing to replicate this study should avail themselves of the facilities of a school with a much larger

population or a combined study of several schools with smaller populations.

The aforementioned variables also need to be studied more in-depth so that we can find out just what it is that affects higher achievement in children.

Also of interest would be further research on the influence of captioned television on the language development of deaf children.

BIBLIOGRAPHY

Birch, J.W. & Stuckless, E.R. (1964, May). "The Relationship Between Early Manual Communication and Later Achievement of the Deaf". Cooperative Research Project 1769. Contract OE-3-10-78. University of Pittsburgh.

Bockmiller, P.R. (1981). "Hearing-Impaired Children: Learning to Read a Second Language". American Annals of the Deaf, 126 , 810-813.

Bodner-Johnson, B. (1985). "Families that Work for the Hearing Impaired Child". The Volta Review, 87 (3), 131-137.

Bodner-Johnson, B. (1986). "The Family Environment and Achievement of Deaf Students: A Discriminant Analysis". Exceptional Children, 52 (5), 443-449.

Brasel, K.E. & Quigley, S.P. (1975). The Influence of Early Language and Communication Environments on the Development of Language in Deaf Children. Institute for Research on Exceptional Children. University of Illinois. Urbana-Champaign.

Brasel, K.E. and Quigley, S.P. (1977) "Influence of Certain Language and Communication Environments in Early Childhood on the Development of Language in Deaf Individuals". Journal of Speech and Hearing Research. 20 (1), 95-107.

Buchanan, C. (1973). "The Discriminative Validity of Selected Sub-tests of the Stanford Achievement Test, Intermediate I Battery, for Hearing Impaired Students". Further Studies in Achievement Testing, Hearing Impaired Students. United States: Spring 1971. Office of Demographic Studies. Gallaudet College. Washington, D.C. Series D, # 13, 47-61.

Gee, J.P. & Goodhart, W. (1985). "Nativization, Linguistic Theory and Deaf Language Acquisition". Sign Language Studies. Linstock Press, Inc. Silver Spring, Md., 49, 291-342.

Hoffmeister, R. & Moores, D.F. (1987). "Code Switching in Deaf Adults". American Annals of the Deaf, 132 (1), 31-34.

Kampfe, C. & Turecheck, A. (1987). "Reading Achievement of Prelingually Deaf Students and Its Relationship to Parental Method of Communication:A Review of the Literature". American Annals of the Deaf, 132 (1), 11-15.

Kusche, C.A., Greenberg, M.T., & Garfield, T. (1983). "Nonverbal Intelligence and Verbal Achievement in Deaf Adolescents: An Examination of Heredity and Environment". American Annals of the Deaf, 128 (4), 458-466.

Serwatka, T.S. & Fetsko, P.H. (1983). "Math Computation and Spelling Achievement of Deaf Children with Deaf Parents and Deaf Children with Hearing Parents". Research Project. University of North Florida and Escambia County Public Schools.

Vernon, M. & Koh, S.D. (1970). "Early Manual Communication and Deaf Children's Achievement". American Annals of the Deaf, (5), 527-536.

REFERENCES

Allen, T.E. (1982). "Toward More Appropriate Use of Achievement Test Scores: Applying the Rasch Model". Gallaudet Research Institute: Progress in Deafness Research. Gallaudet University: Washington, D.C.:

Allen, T.E. & White, C. (1982). "Revising the Stanford Achievement Test, Special Edition for the Hearing Impaired". Gallaudet Research Institute: Progress in Deafness Research. Gallaudet University: Washington, D.C.:

Brasel, K.E. & Quigley, S.P. (1977). "Influence of Certain Language and Communication Environments in Early Childhood on the Development of Language in Deaf Individuals". Journal of Speech and Hearing Research, 20 (1), 95-107.

Harkins, J. (1982). Gallaudet Research Institute: Progress in Deafness Research, 1981-82. Division of Research; Gallaudet College: Washington, D.C.

Ries, P. (1973). "Association Between Achievement Test Performance and Selected Characteristics of Hearing Impaired Students in Special Educational Programs". Further Studies in Achievement Testing, Hearing Impaired Students. United States:Spring 1971. Office of Demographic Studies. Gallaudet College: Washington, D.C.: Series D #13, 3-14.

Stokoe, W.C. (1975). "The Use of Sign Language in Teaching English". American Annals of the Deaf, 120 (4), 417-421.

Woodward, J. (1982). How You Gonna Get to Heaven If You Can't Talk with Jesus: On Depathologizing Deafness. TJ Publishers, Inc. Silver Spring, Md.

Zwiebel, A. (1987). "More on the Effects of Early Manual Communication on the Cognitive Development of Deaf Children". American Annals of the Deaf, 132 (1), 16-20.

The Effects of Facial Attractiveness on Judicial Recommendations Made by Middle-Aged Mid-Western Females

A Thesis

Presented to the
Department of Counseling
and the
Faculty of the Graduate College
University of Nebraska

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
University of Nebraska at Omaha

by
Angela Boyd

August 1989