1972

Comparison of judgments on written compositions of hearing and hearing-impaired high school students

Laurie Newton Cummins

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A COMPARISON OF JUDGMENTS ON WRITTEN COMPOSITIONS OF
HEARING AND HEARING-IMPAIRED HIGH SCHOOL STUDENTS

By

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for the degree of

Master of Arts

UNIVERSITY OF MONTANA
1972

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Chairman, Board of Examiners

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Dean, Graduate School

[Signature]
Date

Dec 28, 1972
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Chapter 1

INTRODUCTION

In reading through a summer camp newspaper written by hearing-impaired children, several persons at the University of Montana were impressed by rather creative, interesting articles, not often expected from this population. One teacher commented that he wasn't so sure that hearing children could write much better. This led to a discussion which became the impetus for this study. Might educators of hearing-impaired children be comparing the written compositions of their pupils to arbitrary and formal standards for correct composition rather than to the compositions of their normally hearing peers? Do hearing children really write very well?

The purpose of this study was to compare the written compositions of hearing-impaired and normally hearing children who are nearing the end of their high school education. The papers were not analyzed by more conventional methods which attempt to measure only concrete aspects of communication such as complexity, syntax, mean sentence length, number of different words, etc. Rather, this study sought to determine whether judges' ratings of the written compositions of hearing-impaired children
would differ significantly from their ratings of the compositions of hearing children, using a rating scale designed to measure general effectiveness of communication. The use of such an abstract term as "general effectiveness" was chosen with the hope that this would include the often unmeasured, more elusive factors which comprise total effective communication, such as content and creativity.

REVIEW OF THE LITERATURE

Despite the great controversies which exist concerning the education of the hearing-impaired, relatively little experimental research has taken place to substantiate various views held by educators. There have been references in the literature to this dearth of objective data regarding specifically the evaluation of the written language of hearing-impaired children (Myklebust, 1960; Stuckless and Birch, 1964). There are, however, several studies describing the nature of the hearing-impaired child's written language and comparisons of this language with that of hearing children of comparable age. These studies attempted to assess written language along concrete, more easily measured dimensions such as sentence length and complexity, grammatical accuracy, and word classes used. In only one study was there any reference to "subjective" evaluation, but even here the criteria...
used to define "goodness" seemed to be basically concrete, expressed in terms of sentence complexity. It also appeared that all ratings were made by the author alone (Goda, 1959).

The written language of the hearing-impaired child, like his oral language, is relatively short, simple, and replete with grammatical errors (Heider and Heider, 1940; Myklebust, 1960). A look at the total number and variety of words used revealed that the overall type-token ratio can differentiate between the written language of hearing children and deaf children (Simmons, 1962). Those children less proficient in oral language tend to be less proficient in written language as well (Goda, 1959; Myklebust, 1960).

The hearing-impaired child uses word classes in a distinctively different way than does the hearing child. His written communication contains a preponderance of nouns (Myklebust, 1960; Simmons, 1962), while words belonging to other classes are used less frequently than in the writings of hearing children (Myklebust, 1960; Simmons, 1962; Wells, 1942). The hearing-impaired and hearing child also differ in the nature of words most frequently chosen to represent the word class. For instance, the deaf use more adjectives in the predicate form, while the hearing use more in the subjective form. "The hearing use more prepositions of time, manner, and adjectival, while the deaf more frequently use those of place and
accompaniment" (Simmons, 1962). Despite these differences, the hearing-impaired do not differ markedly from the hearing in the pattern of difficulty of different word classes (MacGintie, 1964).

Differences in sentence structure were also found to distinguish the written language of the hearing-impaired from that of the hearing. Sentences written by the deaf were less complex (Heider and Heider, 1940). There was less variation between the deaf and the hearing along the feature of word order. The greatest difference, however, was in number of omissions, the most common error among the deaf of all ages. Following this, in order of frequency of error, were found errors of substitution and of addition. The deaf were superior to the hearing only along the dimensions of punctuation and capitalization, and the hearing were unable to match this performance at any age level (Myklebust, 1960).

The total absence of more abstract, less tangible measures of language "goodness" is noticeably missing from the literature on written communication. Myklebust attempted to include such a measure in his Picture Story Language Test, the only test of written language with norms for hearing-impaired children (Myklebust, 1960). In this test, he included the measure of conceptualization and abstract thought, using criteria suggested by Oléron (1953) to determine whether or not the story was
"stimulus bound" (describing observable objects in the picture) or more abstract (including plot, moral, imagination, etc.). He found the deaf to be inferior to the hearing at all age levels, exhibiting a retardation of 4.87 years at age fifteen. Dial (1961) supported these findings, stating that the language of the deaf child is much less abstract and tends to remain in the concrete or naming stage.

Even considering this allusion to abstraction as a contributing variable in good writing, many of the less tangible aspects of written communication have been totally ignored. Perhaps the obvious exclusions lie in the consideration of creativity and content. Elliott, Hirsh, and Simmons (1967) included such measures in their assessment of the effectiveness of the oral language of young hearing-impaired children. Judges rated oral passages of children between the ages of four and nine, along the dimensions of content, creativity, grammatical accuracy, and structural sophistication. They found high correlation among all dimensions, implying a unitary dimension of language "goodness." However, they went on to say that this was not reconcilable with the notion that at least some aspects of language facility should transcend mere counts. Carroll (1958) extracted six oblique factors from objective and subjective evaluations of samples of professional written language. No concrete measures (such
as word counts) showed any significant loadings in the factor labeled "general stylistic evaluation" which accounted for a large proportion of the total variance. However, the samples with which he worked represented very sophisticated written language. Elliott, et al. (1967) conclude that their findings, suggesting unidimensionality of language ability, probably apply most strongly in the early stages of language development and that perhaps this feature exists even more noticeably in the young hearing-impaired than in the young hearing child.

STATEMENT OF THE PROBLEM

Although more abstract dimensions of effective communication would certainly be more difficult to measure, the importance of their contribution to "good writing" should not be overlooked. A composition can have flawlessly correct grammar and include complex sentence structure, yet completely lack inventiveness and originality. Perhaps such dimensions as proper grammar and word class usage are not so crucial to adequate self-expression as are these more abstract variables which are more difficult to pinpoint. Sentence complexity, in particular, is of questionable value to communication when it is carried to extreme. It may be possible to express emotion, enthusiasm, and imagery adequately despite defective sentence structure. "Good" writing appears to be a
total or Gestalt phenomenon which, at least at this time, defies decomposition into discrete, easily measurable elements.

Effective written communication implies the ability to express one's ideas and feelings by means of the written word. Ultimately, the receiver's subjective response to any conveyed message should be the only real measuring stick by which we can determine the effectiveness of the communication. This should be taken into consideration when evaluating the written language of the hearing-impaired. If readers cannot distinguish between the writing samples of hearing and hearing-impaired individuals, using a criterion of overall effectiveness, one would be hard-pressed to say that the hearing-impaired are in fact handicapped when compared to their hearing peers in the area of written communication. Such a finding would also imply that measures heretofore used to judge the writing ability of the hearing-impaired may actually be misleading in assaying the functional communicative ability of these children with regard to written language, particularly when compared to that of their hearing peers.

The purpose of this study, then, was to determine whether judges' ratings of the written compositions of hearing-impaired children would differ significantly from their ratings of the compositions of hearing children when the overall criterion of general effectiveness is used.
It was hypothesized that these ratings would not differ.
Chapter 2

PROCEDURE

SUBJECTS

Thirty children from five public day programs for the hearing-impaired, located in the San Francisco Bay Area, were included in the study. Audiometric scores for children in this group showed a mean pure tone average in the better ear of 72.5 db (ISO 1964 standard) and generally more severe loss at the higher frequencies. Individual pure tone averages ranged from 50 db to no response at the limits of the audiometer. All children included in the test were between fifteen and nineteen years (mean age of seventeen years) of age. Although intelligence measures were not included in the selection, all children were of average or above average ability. (Where such information was absent from a child's file, the teacher's judgment was used.) No child with multiple handicaps was included unless his teacher felt that the additional handicap had not significantly interfered with his ability to learn language. All the children were prelingually deafened.

The normally hearing control group consisted of
thirty high school students attending one of the same schools used in collecting data on hearing-impaired children. The investigator was informed informally that the children in this school came from families representing a fairly normal distribution in socio-economic status. Classes in which one might expect a skewed distribution of intelligence were avoided. Audiometric testing of these children was not possible. They were assumed to be a sample of normally hearing children only by virtue of educational placement. The hearing students ranged in age from fourteen to eighteen years (mean age of sixteen years), one year younger on the average than the hearing-impaired children. It was not felt that one more year would make any significant difference in the ability of the hearing-impaired to write effective compositions.

TESTING PROCEDURE

Test Stimulus

Picture card number 17G from the Thematic Apperception Test was used as a stimulus for the composition. The interpretation of the children's compositions was in no way to include a psychological evaluation; the TAT picture card was chosen because it is known to allow response of sufficient length and variety to suit the purposes of this study.
Instructions to Children

Instructions were given by any mode of communication with which the children were most familiar. This included oral, written, and manual communication, or combinations of each. The instructions were given by the classroom teacher, the communicator with whom each child was most familiar (see Appendix A). Questions relating to comprehension of the directions were allowed, and teachers were instructed to attempt to be certain that each child understood the nature of the task; however, the teacher was to offer no help whatever with the conception or construction of the composition. A total writing time of forty minutes per class was allowed.

RATINGS

Eight college graduates (four female and four male) judged the written compositions of the thirty hearing and thirty hearing-impaired students. The papers were divided into two sets, set A and set B, each of which contained fifteen papers written by hearing children and fifteen papers written by hearing-impaired children. Two female and two male judges read the papers in set A (Judges A); the remaining two female and male judges (Judges B) read the papers in set B. In other words, each judge read only half (30) of the total sixty papers; but each of these halves was composed of an equal number of hearing
and hearing-impaired children's papers (fifteen of each).

To look or train for high interjudge reliability seemed to contradict the very nature of the study, as it was the intent here to allow for very personal, subjective judgment even if that judgment is unique compared with judgments made by others. It was important, however, to know whether the judges would rate the papers according to the same personal, internal standard each time they judged; that is, that the judgments were not simply capriciously assigned. To evaluate intrajudge reliability, the judges were asked to rerate, one week later, the identical thirty papers (presented in randomly rearranged order) which they had already rated. At the time of the first rating the judges knew nothing about the rerating session. This was important in attempting to prevent careful studying of the papers to keep them in memory for later ranking. An intrajudge reliability measure was then taken between Reading One and Reading Two of the same papers. If the judges tended to rate the papers in the same way at both sessions, it was assumed that their decisions were not arbitrary or capricious but were in fact based upon some stable, internal, and personal standard of effectiveness rather than on pure memory of their previous rating.
INSTRUCTIONS TO JUDGES

Certain suggestions included in the instructions to the judges were planted in order to influence their predisposition toward the papers. Specifically, the judges were told that all papers had been written by average children of the same age (in order to prevent their trying to second-guess the examiner's intentions by presuming different samples); and that the definition of general effectiveness might include, though not be limited to, such criteria as structural sophistication, content, grammatical accuracy, and creativity (in order to bring to mind both concrete and abstract dimensions of evaluation). (See Appendix B.)

The judges were first asked to read through a number of papers before rating any, in order to get a rough idea of the total range of effectiveness (the worst papers through the best). Then, as they continued to read, they were to begin to place the stories into five piles, headed by cards which read:

1. **least effective**
2.          
3.          
4.          
5. **most effective**

They were told that the pile on their far left should be those papers they considered to be least effective.
(position one) while those on their far right should be those papers they considered to be the most effective, position five. The three piles in between (positions two, three, and four) were to reflect even divisions of effectiveness, from least to most effective, as they moved from left to right. The judges were also told to place at least one paper in each extreme position, so position one would include the one or more papers they considered to be the least effective of those papers present. Position five would include the one or more papers they considered to be the most effective of those papers present. This was done in order to force them to use the full range of the scale. As they read through the stories, they were asked to continually reconsider and resort until they were satisfied that their final categorization was exactly as they wanted it (see Appendix B).

TREATMENT OF THE WRITTEN COMPOSITIONS

All the papers were typed to control for the influence of neatness and handwriting, factors not considered pertinent to this study. The judges were reminded that there were no errors in typing; that is, all spellings, deletions, punctuation, paragraphing, and other aspects of the written sample were made by the author of the paper and were in no way changed by the typist. No identification of the child's age or hearing level accompanied the
compositions. The judges were told that all papers had been written by children of the same age and educational status. They were entirely unaware of the fact that some of the papers had been written by hearing-impaired children.

**CRITERION MEASURES**

In order to get a more stable and hence repeatable measure of general effectiveness, the consensus or mean of four judges' means (each judge's score was a mean of two scores) was taken as the criterion score of general effectiveness for each paper. The coefficient of risk for comparing the means of these scores of general effectiveness for the two groups was 5%.
Chapter 3

RESULTS

Each paper rated was assigned the score corresponding to the pile in which it had been placed. Therefore, if a paper was placed in pile four, it received a score of four, etc. The scores ranged from one to five, one representing the score for the least effective and five representing the score for most effective. Each paper was rated eight times (four judges rating each paper twice). The mean ratings of all judgments for each of the hearing and hearing-impaired students are listed in Table 1.

Pearson correlation coefficients of intrajudge reliability between the first and second rating sessions are listed in Table 2. All individual coefficients of correlation are above 0.75, the mean coefficient equaling 0.85. These coefficients seemed adequate for the purposes of this study.

Although high interjudge reliability was not considered relevant to this study, the reliability coefficients were calculated in order to present some idea of how much commonality in evaluation existed in this set of judges. To determine the interjudge reliability, the
Table 1. Individual Mean Scores for the Thirty Hearing and Thirty Hearing-impaired Children. Means and Standard Deviations of All Ratings on the Total Hearing and Hearing-impaired Compositions

<table>
<thead>
<tr>
<th>Hearing</th>
<th>Hearing-impaired</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>1.125</td>
</tr>
<tr>
<td>1.75</td>
<td>1.625</td>
</tr>
<tr>
<td>1.875</td>
<td>1.625</td>
</tr>
<tr>
<td>2.25</td>
<td>1.75</td>
</tr>
<tr>
<td>2.875</td>
<td>1.75</td>
</tr>
<tr>
<td>3.0</td>
<td>1.87</td>
</tr>
<tr>
<td>3.0</td>
<td>2.0</td>
</tr>
<tr>
<td>3.0</td>
<td>2.0</td>
</tr>
<tr>
<td>3.375</td>
<td>2.0</td>
</tr>
<tr>
<td>3.5</td>
<td>2.25</td>
</tr>
<tr>
<td>3.5</td>
<td>2.25</td>
</tr>
<tr>
<td>3.5</td>
<td>2.25</td>
</tr>
<tr>
<td>3.625</td>
<td>2.25</td>
</tr>
<tr>
<td>3.625</td>
<td>2.375</td>
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</tr>
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<td>3.875</td>
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<tr>
<td>4.0</td>
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<td>4.0</td>
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<td>3.625</td>
</tr>
<tr>
<td>5.0</td>
<td>3.75</td>
</tr>
</tbody>
</table>

Mean       | 3.61             |
SD         | 0.97             |
\[ t \]     | 5.19*            |

*With 58 df a \( t \) of 2.66 is significant at the 0.01 level.
Table 2. Intrajudge Reliability Coefficients for Each Judge Between First and Second Ratings of the Same Papers

<table>
<thead>
<tr>
<th>Judge</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Judge 1</td>
<td>0.82</td>
</tr>
<tr>
<td>Judge 2</td>
<td>0.79</td>
</tr>
<tr>
<td>Judge 3</td>
<td>0.79</td>
</tr>
<tr>
<td>Judge 4</td>
<td>0.93</td>
</tr>
<tr>
<td>Judge 5</td>
<td>0.92</td>
</tr>
<tr>
<td>Judge 6</td>
<td>0.86</td>
</tr>
<tr>
<td>Judge 7</td>
<td>0.76</td>
</tr>
<tr>
<td>Judge 8</td>
<td>0.91</td>
</tr>
</tbody>
</table>

| Mean | 0.85 |

Pearson coefficient of correlation was calculated between each pair of judges in both Group A and Group B using the mean scores of both judging sessions for each judge. The correlation coefficients appear in Table 3. The mean coefficient for Judges A and Judges B was 0.66 and 0.49, respectively. The mean over all judges was 0.58.

The mean rating of all compositions in the hearing group was 3.61. The mean rating of all compositions in the hearing-impaired group was 2.48. A comparison of the means of the hearing and hearing-impaired groups was made, using a t test for independent measures, and a t of 5.19 was obtained. This was significant at the 0.01 level.

\[
t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{\sigma^2_{\bar{x}_1}}{n_1} + \frac{\sigma^2_{\bar{x}_2}}{n_2}}} ; \quad df = n_1 + n_2 - 2
\]
Table 3. Interjudge Reliability Coefficients for Each Set of Judges

<table>
<thead>
<tr>
<th>Judges A*</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-</td>
<td>0.69</td>
<td>0.38</td>
<td>0.85</td>
</tr>
<tr>
<td>2</td>
<td>-</td>
<td>-</td>
<td>0.50</td>
<td>0.74</td>
</tr>
<tr>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.56</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Judges B**</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-</td>
<td>0.49</td>
<td>0.21</td>
<td>0.62</td>
</tr>
<tr>
<td>2</td>
<td>-</td>
<td>-</td>
<td>0.42</td>
<td>0.59</td>
</tr>
<tr>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.64</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Mean reliability coefficient equals 0.66, significant at 0.01 level.

**Mean reliability coefficient equals 0.49, significant at 0.01 level.

These results indicate a rejection of the stated hypothesis and suggest that college graduate readers will judge the compositions of hearing-impaired high school students to be considerably deficient when compared to the compositions of their hearing peers.
Chapter 4

DISCUSSION

The ratings of the judges in this study suggest that readers tend to consider compositions written by the hearing-impaired as distinctly deficient compared to the compositions of their hearing peers when rating on an entirely personal, internal standard of communicatory effectiveness. These findings are consistent with previous studies which compared the writings of the hearing-impaired to those of the hearing on more concrete measures. It would seem that the written language of the hearing-impaired is deficient compared to that of the hearing in all respects: not only are the technical or grammatical aspects of the composition inferior, but when the more global and inclusive criterion of general effectiveness is employed, the hearing-impaired are again judged less adequate.

In examining the individual mean scores in Table 1, it is interesting to note that the lowest rating assigned to any one of the total sixty papers included in the study was received by a hearing student. Yet as one continues to read through the list of scores from each sample, the striking difference in their distributions begins to
emerge. In Figure 1 one can see how differently the scores of each group are distributed about the means. The majority of the scores received by hearing-impaired students (75.9%) fall below the middle position of 3.0, while only a minority (16.7%) of the hearing students' scores have been registered up to that point. Although some overlap is found in the distributions of these two groups, indicating that many of the hearing-impaired children are rated as high as the poorer hearing writers, this should not imply that we can relax our strenuous effort to improve all modes of communication used by the hearing-impaired. Written communication does not seem to be a crucial aspect of most hearing individuals' daily communicative repertoire, and his oral skills serve him adequately. The hearing-impaired individual's deficiency in written language, however, grows from his deficiency in all aspects of language; yet his need for skill in written communication is more vital than is that of the hearing adult because the poor intelligibility of his speech frequently makes it impossible for him to rely on oral methods to communicate his needs.

Inspection of the spread of ratings received by the hearing children reveals a skewed distribution, implying that among the hearing population there probably exist certain children who exhibit subtle language learning difficulties. As hard as it is to identify such children
Figure 1. Number of children receiving each rating.
in the average normal classroom, it would be almost impossible to isolate such minor language deviations in the hearing-impaired child whose language is already quite impaired because of his hearing loss. Yet we can assume that the hearing-impaired population too has its share of such children, even more so because of the multiple damage caused by agents which precipitate hearing loss. It is difficult for us to know how much of these hearing-impaired children's inability to use language is due to the loss itself and how much is due to additional language learning problems over and above the loss.

Before continuing with the ramifications of the present study, it might be worthwhile to present some of the examiner's original intentions which had to be abandoned. Originally, it was felt that a comparison between papers of different groups of hearing-impaired children educated in different ways would be revealing. Would the compositions of children educated throughout their lifetime by oral methods only differ from papers written by children exposed to both oral and manual methods? Would there be any differences in written language between children who relied heavily upon their hearing aids and those who rarely used an aid? What would be the effect on written skills of a staff of long-time, dedicated teachers and supervisor as opposed to programs in which the teacher turnover rate is high and there exists no
well-qualified supervising teacher? The questionnaire in Appendix D was filled out by each school district participating in this study. However, because there were not enough children from each district meeting the qualifications for inclusion in the study, it was not possible to make any reliable comparisons between these groups.

The data revealed in the present study leaves unanswered the question of whether the hearing-impaired are truly inferior to the hearing when aspects such as content or creativity are considered. This study did not ask the judges to distinguish among grammar, creativity, content, etc. while they were evaluating the papers. Each paper received only one overall score to reflect the general opinion of each judge. Might the compositions of the hearing students have been rated low for different reasons than were those of the hearing-impaired students? It is possible, for instance, that a judge might rate one paper low for its trite story or redundant language while another paper might be rated low for its poor grammatical structure. Further investigation might explore this area in more detail in order to ascertain specific factors which influence a reader's decision regarding what makes a paper effective. A judge might be asked to consider how much aspects such as grammaticality, vocabulary, imagination, organization, structural development, etc. influenced his decision by weighing these factors on some type
of bi-polar scale. This may reveal that the hearing-impaired are rated low or high for different reasons than are the hearing. Still, one must remember that a typical reader judges a composition on an overall, eclectic measure of effectiveness. He does not analyze the paper according to discrete aspects of the work but relies on his subjective feeling about it. This overall criterion remains the ultimate measure of effectiveness.

Another interesting direction for further research would be to have an individual who was blind to the sources of the compositions correct their grammar and then have the corrected papers rated by new judges for effectiveness of communication. This would isolate the effect of grammar from other aspects of the written communication.

It is also possible that the hearing-impaired child does have an internal sense of content and creativity but that his written language is so poor it prevents him from effectively expressing the conceptual imagery which is in his mind. Some educators of the deaf would argue that a good command of language is necessary to develop and discuss ideas within oneself and with others. Therefore the hearing-impaired child with poor language cannot develop fully. Professor Lewis, of England, feels that the verbally gifted child has greater potential for creative work than does his less verbally gifted peer--that attainment in language and the expressive arts go hand in hand.
(Johnson, 1970). Do conceptual and creative development correlate directly with increasing levels of language attainment? It is hard to answer this question so long as we use written or oral English language as the criterion of effectiveness. This is a mode of expression with which the deaf child is not as familiar as is the hearing child. We could only provide a fair evaluation of these inner processes if we were to allow the hearing-impaired child to express himself in a language with which he is as familiar and experienced as the hearing child is with English. For most hearing-impaired children, such a language does not exist.

If, as many educators feel, nongrammatical aspects such as content and creativity do play a vital part in the development of good expressive language skills, this belief should be reflected in the classroom. Johnson (1970) expresses her view that the expressive arts are a vital part of any language program because they help to foster a climate of purposeful communication, so often absent in many classroom experiences, and act as a spur to language development. Her plea for more creative work in the classroom should be supported by the reminder that creative aspects of language should also be an integral part of our judgment of the effectiveness of that language.

Thus far, aspects of good language skills such as
grammar and creativity have been discussed and their relevance to effective communication has been emphasized. Not to be forgotten, however, are those acoustical aspects of grammar which are so often overlooked, such as the meaning transmitted by subtle intonational and temporal changes. Teachers of the hearing-impaired do try to convey these features of our language to their students; but these ways in which we communicate meaning are so subtle and so fleeting that we, ourselves, are probably unaware of many of them. We can probably never compensate completely for the parts of language which are missed when one cannot hear language.

Perhaps the most revealing investigation of all would lie in a comparison of severely hearing-impaired high school students educated either by the Rochester Method or by the new signs of Seeing Essential English with those educated by other methods. The Rochester Method emphasizes fingerspelling every word of the sentence so that the child misses no part of the total and correct English grammar. Seeing Essential English (the SEE signs) also places importance on keeping English grammar complete and intact, but it uses a system of signs (as opposed to only fingerspelling) which include every part of the correct English structure. Therefore a child who knows this sign system can translate directly, word for word, between oral or written English and signed
English. He is learning only one language and need learn no new syntactical structures as one does when learning a foreign language or when translating between the more traditional American Sign Language and English.

A child who has been consistently exposed to this complete and correct grammar from his earliest years should be able to use the same correct grammar as do his hearing peers. Although some impoverishment of vocabulary might continue to be seen simply because it may be impossible to stimulate a child with as much visual language as the hearing child receives auditorily, it would seem that the deficient grammar so typically attributed to the deaf should be absent. Studies such as these may be difficult to do at the present time as these methods of instruction are relatively new, and we do not find many hearing-impaired children who have received consistent education by such methods since their preschool years. It seems to this author, however, that when such studies on written compositions can be made, their results will be a significant test of the effectiveness of these methods of instruction.

Another method of providing the hearing-impaired child with complete and correct English is through reading. It is well known that a deaf person cannot discriminate and understand every word when he must rely on lipreading alone. When he is reading, however, the hearing-impaired
individual is receiving exactly the same stimulation as is the hearing person. It is therefore critical that we encourage the hearing-impaired child to appreciate and enjoy reading. Reading serves not only as a source of information but as an exposure to style and creative uses of language from which the hearing-impaired child can learn to appreciate the subtleties and variations of our language which make it so expressive and self-satisfying.

Children exposed from their earliest years to forms of complete language such as reading and correct oral and manual English should eventually have an expressive language with which they are sufficiently familiar to allow them to express their inner thoughts adequately. At such time comparisons of the more creative and internal aspects of communication would be more reasonable.
Chapter 5

SUMMARY AND CONCLUSIONS

This study was undertaken to supplement previous findings on comparisons between written compositions of hearing and hearing-impaired individuals. Although there has been a fair amount of literature reviewing comparisons of these compositions on concrete measures such as sentence length and complexity, grammatical accuracy, word classes, type-token ratio, etc., no studies have been found which evaluated them solely on readers' subjective responses to the effectiveness of the written paper. It was felt that the evaluation of such compositions on concrete measures alone excluded from observation some critical dimensions which go into making a paper effective, dimensions such as creativity and content. It was hypothesized that judges might not rate the compositions of hearing-impaired individuals as inferior to those of their hearing peers if purely abstract, subjective criteria of judgment were used.

Thirty high school students from five public day programs for the hearing-impaired were included in the study along with thirty hearing students of comparable age from a high school in the same area. Audiometric scores
for the hearing-impaired students showed a mean pure tone average in the better ear of 72.5 db (ISO 1964 standard). The children were shown picture card number 17G of the Thematic Apperception Test and asked to write a story about the picture. Instructions were given by any mode of communication with which the children were most familiar. Each child was allowed to write for forty minutes.

Eight college graduates judged the written compositions, each judge reading only thirty papers, fifteen of which were written by hearing students and fifteen of which were written by hearing-impaired students. A week later the judges rerated the same thirty papers. Intrajudge reliability between the two rating sessions was 0.85. The interjudge coefficient of correlation was 0.58, expectedly lower than the intrajudge correlation.

The papers were then analyzed by use of a t test to determine whether there existed any significant difference between the mean score of the compositions of the hearing children and the mean score of those of the hearing-impaired. The means were found to differ significantly, the obtained t value exceeding the 0.01 level of confidence. These results reject the hypothesis that judges' ratings of the compositions of hearing-impaired high school students will not differ from their ratings of the compositions of hearing high school students.
Although the results of these personal judgments were found to agree with earlier concrete measures on the compositions of the hearing-impaired (that is, they both show the hearing-impaired individual's written language to be inferior), one cannot assume that this deficiency can be ameliorated by further instruction in grammar or structural sophistication alone. Such abstract measures as creativity and content probably play some part in determining the effectiveness of a composition. Further investigation into the specific criteria which judges consider when rating written language might reveal that in some cases the papers of hearing and hearing-impaired students are rated the same but for different reasons.

Another recommended area of study is a comparison of the written compositions of children consistently instructed from their earliest years by either the Rochester Method or the signs of Seeing Essential English, both methods of presenting complete and correct English language visually. It is hypothesized that a child who sees this complete English form throughout his language-learning years should be able to use the English language as correctly as do his hearing peers.
APPENDIX A

INSTRUCTIONS TO CHILDREN

I want you to write a story about this picture. Think about the picture before you write so you can make up a good story. You can write about anything you like.

You will have 40 minutes to write. I will pick up your papers at __:00. If you finish before __:00, sit quietly until everyone else is finished.
APPENDIX B

INSTRUCTIONS TO JUDGES

The stories you are about to read have all been written by average children of the same age. You will be asked to read and then rate them on their effectiveness of communication. The definition of "effectiveness" will be left up to your subjective judgment. It might include, though not be limited to, such criteria as content, structural sophistication, grammatical accuracy, or creativity. Again, we are interested in what you, as an individual, consider to be an effective story.

Please read through enough stories to get a rough idea of the range of effectiveness (the worst papers through the best). Then, as you read, begin to place the stories in five piles, the pile on your farthest left would be those papers you consider to be least effective (position one). Those on your farthest right would be those papers you consider to be most effective (position five). The three piles in between (positions two, three, and four) should reflect even divisions of effectiveness, from least to most effective, as you move from left to right.

You must place at least one paper in each extreme position, so position one should include the one or more
papers you consider to be the least effective of those papers present. Position five should include the one or more papers you consider to be the most effective of those papers present. It is not necessary to place the same number of papers in each pile.

As you continue to read more stories, you may feel that you want to reconsider and resort until you are satisfied that your final categorization is exactly as you want it. When you are certain that the papers are consistently ordered from least effective to most effective, according to your criteria of effectiveness, write the number "one" in the upper right hand corner of all papers in your "one" pile. Write "two" on all papers in your "two" pile, etc. Then clip the papers back together and return them to the tester.

There are no errors in typing. All punctuation, spelling, deletions, paragraphing, and other aspects of the written sample were made by the author of the paper and were in no way changed by the typist.
APPENDIX C

DATA SHEET FOR COLLECTING INFORMATION 
ON EACH CHILD

Name _________________________ School ________________
Teacher _______________________ Grade ________________
Birthdate _______________________ Age ________________
Sex ___________________________ Intell. ________________

Pure tone average: left _____ right _____
ISO

Type of loss ________________
Age of onset of hearing impairment ________________
Type of amplification ________________

Has own aid? __________
Amount of day aid is worn: 1/3 1/2 3/4 all day
How long has had own aid? ________________

Response to aid:
1) likes and wears at all times _____
2) seems to benefit from somewhat, but doesn't rely
   on it much _____
3) doesn't like to wear, but will _____
4) doesn't like to wear, and won't _____

Years in this program _____ Background if from another
program ___________________
Other handicaps: (circle)

cerebral palsy  severe visual impairment
brain damage (aphasia)  emotionally handicapped
mental retardation  bilingual family
none  other ____________________

Amount of day integrated into regular class at close of
last year: ________________
APPENDIX D

INFORMATION ON EACH SCHOOL PROGRAM

1. Name of program ________________________________
2. Location ________________________________
3. Age of program from inception _____________________
4. Number of children in total program ________________
5. Number of classroom teachers ____. Number of teachers with degree of teacher of the hearing-impaired (does not include speech therapists) ____
   Number of teachers with degree of speech therapist __
   Number of teachers with degree in education ______
   Other kinds of degrees ____________________________
6. Does your program have a supervising teacher specifically trained as a teacher of hearing-impaired children? _____. What, briefly, is his responsibility? ________________________________
   How long has your program had such a position? ____
   If your program has some other supervisor, please specify his background __________________________

7. Type of children in program:
   a. Children with both moderate and severe losses are taught in the same class ________________
   b. Children are separated according to severity of loss (or ability to make use of residual hearing) and taught in different classes ____________

8. Method of communication used in classroom: (check one)
   a. oral and written communication only ___________{38}
b. oral and written communication, accompanied by fingerspelling and signs

c. primarily fingerspelling and signs

d. fingerspelling and oral, no signs

e. other

9. Use of amplification in classrooms (preschool through high school)

a. children have individual aids

b. children use group amplification

   Amount of day worn: 1/3 1/2 3/4 all

c. percentage of children with some type of amplification

10. Approach to language instruction:

a. primary emphasis on spontaneous language development, sometimes at the expense of precise articulation

b. primary emphasis on acquisition of correct speech patterns and grammatical forms

c. left to the discretion of each classroom teacher

d. other (please describe)
BIBLIOGRAPHY


