ABSTRACT
          The study investigated revision skills of 20 deaf
secondary students (10 good writers and 10 poor writers). Students
were asked to write and then revise their draft. Feature analytical
rating was completed on each S's draft and revision, with scoring
performed on content, linguistic considerations, and surface
mechanics (spelling, punctuation, legibility, and minor grammatical
errors). Results revealed that students made few changes from their
drafts to their final copies. Contrary to hypotheses, good writers
did not make more changes (i.e., improvements) from draft to revised
writing than poor writers. Good and poor writers did, however, differ
greatly in the content of their writing protocols, despite the
finding that `or writers were more likely to use a structural
organization `ile good writers focused on cohesiveness. The major
implication `as that deaf students should be taught to revise their
writings. (CL)

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REWRITING: WHAT DO DEAF STUDENTS DO WHEN THEY REVISE? [1]

[2]

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Revision may be defined as anything the writer does after her[1] draft. According to Murray (1978) writing is rewriting; yet he maintains that because rewriting is rarely taught, the student generally learns to recopy her first draft rather than revising it. There is some evidence that by twelfth grade, hearing good writers attend to the purpose of their writing and revise their content more thoroughly than their poor writer peers (Stallard, 1974). While the deaf writer can be taught to revise (Gormley, 1981b), it remains to be examined whether deaf writers typically revise and, further, whether deaf good and poor writers differ in the aspects they emphasize in revision.

Persuasive writing demands that the writer give her opinions for a specific audience (Britton, 1978; Britton, Burgess, Martin, McLeod, & Rosen, 1975), The major purpose in persuasive discourse is to motivate the audience (i.e. the reader), to action or to convince the audience to adopt a certain point of view by clearly developing logically strong arguments relative to a specific issue (Kinneavy, 1971). Persuasive writing is one part of the New York State Competency Test in Writing (New York State Education Department, 1979) which deaf students must pass if they are to receive a high school diploma in New York State. Besides the pragmatic importance of learning to write persuasively, it is a skill which can have invaluable potential to the deaf writer interacting in the world at large.

For these reasons, persuasive writings were elicited from deaf good and poor writers.

The evaluation of writing has received much attention recently (Cooper & Odell, 1977, 1978; Diederich, 1974; Hall, 1981). While the literature clearly suggests that the manner in which a piece of writing is evaluated will effect instructional suggestions that may be gleaned from the evaluation, there is also evidence that teachers are inconsistent in the standards they use in the

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[1] "her" will be used throughout to refer to both genders

evaluation (Diedrich, 1974). Three methods which can reduce variation in the
evaluation of writing are: general impression (Cooper, 1977; Hall, 1981),
primary trait analysis (Lloyd-Jones, 1977), feature analytical scoring
(Cooper, 1977; Diedrich, 1974). In the general impression method the evaluator
reads the paper once and assigns a grade/score based on the overall paper; this
method of evaluation would seem inappropriate for evaluating the writings of
deaf students because the evaluator may be overly influenced by the preponderance
of grammatical difficulties in deaf writing. Stated another way, the omission
articles and word endings (Blackwell, Engen, Fischgrund & Zarcadoolas, 1978;
Bunch, 1979) may unduly prejudice the evaluator negatively, while the content
of the message may be overlooked. Unlike the general impression method which
focuses on all aspects of the paper as a whole, primary trait analysis indicates
which segment of a written protocol is to be evaluated. While Gormley (1981a,
1981c) has found the primary trait method of evaluation appropriate when examining
the content of the deaf writers' message aside from grammatical errors, it
does not provide a broad perspective for evaluating both the content as well as
the mechanics of writing. Thus, feature analytical scoring provides a better
framework than primary trait analysis in examining deaf students' writings because
it allows the evaluator to focus on more than one aspect in writing (e.g. content
and mechanics) and, further, to weigh these aspects, (Gormley, 1981c). For
example, content could be viewed as twice as important as the mechanics of writing.

Three categories are suggested for inclusion in feature analytical evaluation
of deaf students' persuasive writing: content, deaf linguistic considerations,
surface mechanics. As the name implies, content examines the protocal in terms
of appropriateness development, and completeness of the response. Deaf linguistic
considerations are those serious errors which the deaf frequently make in their
writing, namely: word order (Sarachan-Deily, 1982) omission of subjects and main

verbs (Russell, Quigley & Power, 1976,)violation of semantic relations, (Sarachan-Deily, 1982) errors in use of syntax (excluding derrivational/ inflectional endings, articles,possessives).(Blackwell, Engen, Fischgrund, Zarcadoolas, 1978). The final category of surface mechanics addresses spelling, punctuation, capitalization, legibility, minor grammatical errors (derrivational/ inflectional endings, articles, possessives). These categories allow an examination of deaf writers' compositions in terms of intent, serious syntactic errors and mechanics of writing; given the rationales for these categories, feature analytical evaluation is likely to have direct implications for instruction.

The purposes of this study were to examine what deaf writers do when they revise, and to compare their original drafts with their revised writings, and to investigate the general characteristics of good and poor deaf writers. Several hypotheses were generated for this investigation. First, it was ex- pected that good writers would be more likely to revise their drafts than poor writers. Further, k ...n the three general categories examined (content, linguistic considerations, and surface mechanics) it was expected that good writers would be significantly better than the poor writers in all three categories Specifically, it was anticipated that : 1) good writers would be more likely to include suggestions, reasons, and conclusions in writing than the poor writers 2) good writers would score higher on measures of organization and cohesiveness, and 3) good writers would make fewer errors in the surface mechanics of spelling, punctuation and capitalization.

Subjects

Before subject selection, classroom writing samples were obtained from all students placed in public high school in day classes for the deaf, who

returned signed parental permission slips. The writing samples were then rated as "good" or "poor" writing by one of the examiners and by the students' classroom teacher. Both professional judgments and general impression holistic rating (Hall, 1981) were used as criteria. From the population consisting of all students receiving identically judged samples, 20 students were randomly selected to participate in the study such that there were 10 good and 10 poor writers.

All twenty subjects had severe to profound hearing losses and were pre-lingually deaf. Information regarding chronological ages and pure tone averages for both groups of deaf subjects is summarized in Table 1.

Insert Table 1

Stimuli and Procedure

The subjects were tested in groups of two to four students. Each student was given two pieces of lined, yellow paper (8-1/2 x 11") and a copy of the following paragraph:

> Each year car crashes cause the death of many teenagers.
> Something should be done to reduce these deaths. Your
> school principal wants to know how the problem of teen-
> age deaths in car accidents might be prevented. Write
> a composition giving your suggestions on this issue.
> Be sure to include at least two reasons to support each
> suggestion.

Directions were given via total communication and in writing; no additions, elaborations, or other explanations were given. The students were given a maximum of 45 minutes to complete the task; then, their drafts were collected.

Two days later, the subjects' drafts were returned to them. Each subject received the draft, two pieces of white lined paper (8-1/2" x 11"), and directions to "edit or revise your composition to show your best writing." "Best writing" was not elaborated. (The color of the paper was used only to distinguish draft from revision.) As before, the subjects were tested in small

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groups, and a maximum of 45 minutes was alloted for the task.

Protocol Scoring

Feature analytical rating was done on each subject's draft and revision, as described in Appendix A. Within categories the maximum total of points was: content (32), linguistic considerations (13), surface mechanics (13). Interrater reliability for these scorings was r=.94.

RESULTS

The means and standard deviations for the three categories are presented in Table 2.

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         Insert Table 2
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An overview of this table suggests that students made few changes from their drafts to their final copies. These observations were formalized using Pearson-product moment correlation coefficients which are presented in Table 3.

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         Insert Table 3
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Students' draft and final protocols were then reexamined with students receiving a score of "zero" when their drafts and final copies were identical and a score of "one" if there was any change (minor or major). The data were converted to proportions and analyzed by the test for differences between proportions (Guilford & Fruchter, 1978). The resulting z was not significant. This finding, in conjunction with the high correlations in Table 3, suggests that students actually make very few changes from their original drafts to their final copies. Thus, only the final copies were examined in the remainder of the paper.

Because the scores within categories had different maximum possibilities, raw scores were changed to proportions which were, thereafter, converted by arcsin transformations. Unless otherwise specified, analyses used arcsin transformation scores.

Content

Within the category of content, several analyses were conducted. Good writers ($\bar{X}=1.5$) were significantly more likely to include an introduction than were poor writers ($\bar{X}=.5$) [$t(18)=3.16$, $p<.01$]. A 2x3 (ability X specific content) factorial analysis of variance procedure with repeated measures on the specific content included (suggestions, reasons, conclusions) indicated a main effect for ability [$F(1,18)=13.13$, $p=.001$]; that is, good writers' content was significantly better than poor writers. There was also a main effect for specific content [$F(2,36)=21.63$, $p=.001$]; Newman Keuls (Winer, 1971) post hoc contrasts revealed that both groups were significantly more likely to include suggestions($p<.05$) and reasons ($p<.01$) than conclusions ($\bar{X}$ suggestions = 2.31, $\bar{X}$ reasons = 1.45, $\bar{X}$ conclusions = .85). Simply stated, both good and poor writers were significantly less apt to include a conclusion in their writing than either suggestions or reasons. There was, however, no interaction between ability and specific content.

The content of good and poor writers' protocols was examined more broadly. Specifically, a 2x2 (ability X broader content) factorial analysis of variance procedure with repeated measures was conducted on the organization and cohesiveness of the subjects' writings. While there was no main effect for writing ability or broader content, there was a significant interaction between these [$F(2,18)=120.76$, $p=.001$]. Newman Keuls post hoc contrasts revealed that poor writers ($\bar{X}=7.46$) were significantly more likely ($p<.01$) to have structured or organized compositions than were good writers ($\bar{X}=3.35$), while good writers' protocols were significantly more likely ($p<.05$) to be higher in cohesiveness ($\bar{X}=7.09$)

than in structured organization. Conversely, poor writers' protocols were
significantly more likely (p<.05) to be well organized than cohesive ($\bar{X}$=7.46,
$\bar{X}$=4.25 respectively). The cohesiveness of the good writers' protocols signifi-
cantly exceeded that of the poor writers ($\bar{X}$=7.09, $\bar{X}$= 4.25 respectively).
It may be that poor writers focus largely on a structured framework, whereas
good writers concentrate on the cohesiveness of their writing.

Deaf Linguistic Considerations

Because deaf writers frequently omit verbs and subjects, use typical
syntactic structures and fail to clarify pronoun reference, these aspects of
their writing were specifically examined in a 2x3 (ability X linguistic consider-
ations) factorial analysis of variance with repeated measures while there was
a tendency for poor writers to make more errors in these areas, there was no
main effect for ability $[F(1,18)=3.25, p=.09]$; there was, however, a significant
interaction between ability and these linguistic considerations $[F(2,36)=91.42,$
$p=.002]$. Newman Keuls post hoc contrasts revealed that poor writers were more
likely to delete nouns and/or verbs than were good writers ($\bar{X}$=6.51, $\bar{X}$=2.91
respectively). Thus these findings suggest that although good and poor writers
look rather similar in the general category of deaf linguistic considerations,
poor writers were significantly less likely to include essential nouns and verbs
in their writings.

Deaf writers often err in word order (e.g. "must be above 18" is written
as "must be 18 above"). Using the raw data scores on word order, results in-
dicated that poor writers ($\bar{X}$=1.4) were significantly more likely to use incorrect
word order in their protocols than were good writers ($\bar{X}$=2.3) $[t(18)=2.25,$
$p<.05]$. However, when their maintainance of semantic relations was examined,
there were no significant differences between deaf good & poor writers.

Deaf writers tend to err in surface mechanics; that is, they often omit derrivational and inflectional endings as well as articles and possessives. Deaf poor and good writers were not significantly different in these grammatical omissions. It was observed that both groups tended to make many of these grammatical errors and, further, that there was a great deal of variation within the groups. The means and standard deviations of students' raw scores are presented in Table 4.

Insert Table 4

When these scores are interpreted with respect to the feature analytical scoring guide (Appendix A), it is apparent that students tended to make at least four but not more than ten errors of this type.

DISCUSSION

With respect to the basic question posed in this paper, "What do deaf students do when they revise?", the answer is "they don't". While it was hypothesized that good writers, rather than poor writers, would make more changes (i.e. improvements) from draft to revised writing, the findings of this investigation indicated that in general students made minimal changes in their compositions. It may be that the idea of reworking and revising a piece of writing is an understanding these writers have not yet reached. Stated another way, while proficient writers frequently maintain that writing evolves and requires re-finement (Hartley, 1980), it is likely that students have simply not reached this advanced stage of writing. That is, writing a paper and basically re-copying it may be sufficient for their purposes. It could be that as Gormley (1981b) has suggested deaf writers may need to be taught strategies for evolving writing.

Deaf good and poor writers differed greatly in the content of their writing protocols. As predicted, good writers more frequently opened with an introduction, included suggestions and reasons and made conclusions than did the poor writers. This focus on content is most likely the essence of the difference between good and poor writers (be they deaf or hearing); good writers' content is appropriate and well developed, while poor writers' content is frequently lacking and inappropriate. Interestingly enough, poor writers were more likely to use a structured organization (i.e. introduction, suggestions, reasons, conclusion/summary, whereas good writers focused on cohesiveness. Rather than attending to a logical framework per se, good writers concentrated on clarifying intersentence relationships such that the reader would be able to comprehend smoothly from one sentence to the next. While it is not specifically examined, it follows conceptually that these deaf good writers may be beyond using a specific format or framework for writing a composition and may focus more on making their intersentence information clear.

Some support for the notion that good writers produce sentences which are clear and related is found in this investigation. Poor writers were more likely to omit major nouns and verbs and to reverse word order than were good writers; surely, such strategies adversely effect the cohesiveness of their compositions. Thus, while poor readers made more of these serious syntactic errors than did good writers, deaf writers, regardless of ability, made frequent and similar errors/deletions in derivational/inflectional endings, articles and possessives.

The major pedagogical implication of this research is that deaf students should be taught to revise their writings. Active thoughtful revision should enable the writer, be s e deaf or hearing, to improve in self-editing. It follows that many of the inflectional and mechanical errors are likely to improve (Gormley, 1981b). In fact, Shaughnessy (1976) contends that many writing problems are reading errors; that is, the writer does not critically read her discourse. Shaughnessy continues that in order for the writer to be effective, she must be the first reader. It may be that deaf writers generally need to be taught that writing evolves in stages and that the writer must also be a critical reader at all stages. Perhaps deaf students writing could be improved through three stages of revision: focusing first on content, secondly on major linguistic difficulties, and finally on surface mechanics.

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TABLE I

MEANS AND STANDARD DEVIATIONS OF SUBJECTS' CHRONOLOGICAL AGES AND PURE TONE AVERAGES

	Poor Writers[a] X (SD)	Good Writers[a] X (SD)
Chronological Age	17.4 (.44)	17.2 (.88)
PTA[b]	91.7 (9.79)	84.9 (15.5)

[a]n=10

[b]For the better ear, only at 250, 500, 1000, 2000 Hz

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TABLE 2

SUMMARY OF MEANS AND STANDARD DEVIATIONS OF

MAJOR CATEGORIES BY WRITING ABILITY ON DRAFTS AND REVISIONS

	Poor Writers[1]		Good Writers[1]	
	Draft	Revision	Draft	Revision
	$\overline{X}$ (SD)	$\overline{X}$ SD	$\overline{X}$ (SD)	X (SD)
Content	10.50 (3.44)	10.70(3.43)	22.60(6.10)	22.40(6.28)
Deaf Linguistic Consideration	5.70 (2.00)	5.80 (2.04)	8.20(2.74)	8.40(2.72)
Surface Mechanics	6.80 (1.75)	6.50 (1.51)	8.70 (1.25)	8.50 (1.65)

[1]
n=10

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Gormley (1982)

TABLE 3

PEARSON PRODUCT MOMENT CORRELATION COEFFICIENTS (r) BETWEEN DRAFTS AND REVISIONS FOR ALL SUBJECTS

	Poor Writers'	Good Writers'
Content	r=.99	r=.99
Deaf Linguistic Considerations	r=.99	r=.91
Surface Mechanics	r=.92	r=.89

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TABLE 4

MEANS AND STANDARD DEVIATIONS OF STUDENTS' FEATURE ANALYTICAL
WRITING SCORES ON SURFACE GRAMMATICAL ERRORS

	Grammatical Errors	
	Poor Writers	Good Writers
$\bar{X}$	1.2	2.0
SD	1.03	1.15

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APPENDIX A

FEATURE ANALYTICAL SCORING GUIDE

Content = 32 points
Other Linguistic Considerations = 13
Surface Mechanics = 13

CONTENT (32)

Introduction (2)
    (2) clearly identified purpose for the composition
    (1) incomplete attempt to identify the purpose; nearly
        verbatim restatement of the assignment
    (0) no introduction

Suggestions (2 times) 3 x 2 =(6)
    (3) suggestion related to the topic, feasible suggestion, clearly
        stated
    (2) appropriate suggestion, vaguely stated
    (1) not related to the topic; not complete
    (0) no suggestion; restatement of prior statement

Reasons (4 times) 2 x 4 = (8)
    (2) clear support for suggestion
    (1) not clearly related to suggestion
    (0) reason not given; reason repeated; incorrect reason

Conclusion (3)
    (3) inferencing from or extending suggestions and reasons
        (e.g. therefore), cohesive
    (2) limited attempt to extend or draw conclusions beyond
        suggestions and reasons given
    (1) concluding statement that makes non-specific references to
        suggestions
    (0) no conclusion

Summary (2)
    (2) adequate restatement of main theme of assignment
    (1) cursory attempt at ending or closure
    (0) no summary

Sense of Audience (3)
    (3) excellent clarity, no inferencing required of reader
    (2) good clarity, reader required to inference 1-4 times
    (1) poor clarity, reader required to inference 5 or more times
    (0) unclear to reader who/what is happening

Organization (5)
   (5) introduction, suggestions, reasons, conclusion/summary
       are all in clearly logical order
   (4) all are in logical order
   (3) major parts (i.e. suggestions and reasons) are in logical
       order
   (2) some parts are in logical order
   (1) most parts are not in logical order
   (0) no logical organization

Cohesiveness (3)
   (3) clear intersentence relationships
   (2) occasionally unclear intersentence relationships
   (1) generally unclear intersentence relationships
   (0) disjointed, unconnected sentences

OTHER LINGUISTIC CONSIDERATIONS (13)

Word Order (3)
   (3) consistently acceptable
   (2) sentence with word order error
   (1) 2-3 sentences with word order errors
   (0) 4 or more sentences with word order errors

Major Parts of Speech (3)
   (3) all subjects and main verbs included
   (2) 1-2 omissions of subject/main verb
   (1) 3-4 omissions of subject/main verb
   (0) 5 or more omissions of subject/main verb

Maintaining Semantic Relations (2)
   (2) no violation of semantic information
   (1) 1 violation of selectional/categorical restrictions
   (0) 2 or more violations of selectional/categorical restrictions

Correct Use of Grammar (3)
   (3) no errors in the use of syntax (excluding derrivational endings)
   (2) 1 sentence with an error in the use of syntax (including tense)
   (1) 2-3 sentences with errors in the use of syntax (same constraints
       as above)
   (0) 4 or more sentences with errors in the use of syntax (same
       constraints as above)

Appendix A

Pronominalization (2)
- (2) pronoun references correct and appropriate
- (1) 1-2 errors in pronoun reference or failure to use pronouns when expected
- (0) 3 or more errors in pronoun reference or failure to use pronouns when expected

SURFACE MECHANICS (13)

Spelling (2)
- (2) all correct
- (1) 1 - 3 spelling errors
- (0) 4 or more spelling errors

Punctuation and Capitalization (2)
- (2) all correct
- (1) 1-3 errors
- (0) 4 or more errors

Legibility (2)
- (2) cursive writing
- (1) manuscript
- (0) sloppy, difficult to read

Grammatical Errors (4)
- (4) no deletions or errors on derrivational/inflectional endings, articles, possessives
- (3) 1-3 errors in deletion/addition as described above
- (2) 4-6 errors in deletions/additions as described above
- (1) 7-9 errors in deletions/additions as described above
- (0) 10 or more errors in deletions/additions as described above

Sentence Variety (3)
- (3) complex, compound and expanded sentences
- (2) compound and expanded; mostly expanded simple sentences
- (1) run on sentence(s); mostly simple sentences; some attempt at compound/expanded sentences
- (0) all simple sentences