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EVALUATION ISSUES RELATED TO WRITING SKILLS  
OF COLLEGE EDUCATED PROFESSIONALS

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ABSTRACT

This study addressed the writing of college educated officers compared to their overall performance in an introductory Army course. The effects of an effective writing (communicative skills) program and a remedial enrichment program were also examined. A total of 137 U.S. Army lieutenants, who were students in the 15-week Military Police Officer Basic Course during January through June of 1987, completed both indirect and direct measures of writing skills. The indirect measure was the Test of Standard Written English (TSWE), and the direct measures consisted of six different written exercises. Officers scoring a scaled score of 40 or above on the TSWE were sorted into groups of active and reserve component officers and then were randomly assigned to two experimental groups. All officers scoring below a scaled score of 40 had to take the enrichment program. Ninety-eight of the students were placed in the writing enrichment program. The enrichment program significantly improved the writing skills of officers with initially deficient skills. However, the enrichment program improved neither the writing skills of officers initially scoring higher on the initial indirect measure nor their performance in the overall course. There was a significant relationship between the indirect and direct assessment techniques. The indirect assessments provided a statistically significant predictive measure of overall course averages. The results support the usefulness of remedial writing programs with indirect tests of writing performance; effective writing programs would significantly improve the productivity of college educated professionals. Four data tables, a 29-item list of references, and the communicative skills grade sheet are included. (RLC)

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## ABSTRACT

One hundred thirty seven lieutenants completed both indirect and direct measures of writing skills. Of these students, 98 were placed in a writing enrichment program. The Test of Standard Written English (TSWE) was the indirect measure. The direct measures consisted of six different written exercises. The enrichment program significantly improved the writing skills of officers with initially deficient skills. There was a significant relationship between the indirect and direct assessment techniques. The indirect assessments also provided a statistically significant predictive measure of overall course averages. Support was provided for the usefulness of remedial writing programs and of indirect tests of writing performance.

EVALUATION ISSUES RELATED TO WRITING SKILLS  
OF COLLEGE EDUCATED PROFESSIONALS

This study addresses the writing of college educated officers compared to their overall performance in an introductory Army course. The effects of an effective writing program and a remedial enrichment program are also examined. This study provides insight into the writing skills of college educated professionals as they move from the college world.

The problem with writing skills is well documented. The 1975 Newsweek article, 'Why Johnny Can't Write,' is a classic description. 'Willy-nilly, the U.S. educational system is spawning a generation of semiliterate' (Sheils, 1975, p. 58). The National Council on Excellence in Education (1983) reported, 'Business and military leaders complain that they are required to spend millions of dollars on costly remedial education and training programs in such basic skills as reading, writing, spelling, and computation' (pp. 8-9). Ronalds (1979) noted several leading business colleges have taken actions based on business executives 'discovering that a murky memo wastes the time of staff and of high-priced managers and that poor communications can harm a company's image in the eyes of the public and the government' (p. 73).

The military has the same problems. An Air Force document noted the dollar cost. 'The Air Force turn out a staggering 500 million pages of writing each year. The cost in salary time to read all that paperwork just once comes to \$120 million' (Department of the Air Force, 1980, p. v). The Army defined a

standard for effective writing which closely matches the requirements in business. 'Effective writing is writing that can be understood in a single rapid reading and is generally free of errors in grammar, mechanics, and usage' (Department of the Army, 1985, April, p. 3).

On a personal note, I have been supervising college educated military officers since 1978 and feel their major professional deficiency is the inability to write clearly and concisely. The result is that correspondence has to be written and rewritten, at considerable loss of productivity. Frequently, documents elicit inappropriate responses because the intent of the document is unclear. Again, time is wasted.

#### Enrichment Programs

The message appears to be that something has to be done to improve writing skills to prevent the loss of dollars and productivity. While a variety of basic writing programs have been studied, David and Stine (1984) conducted one of the few studies on the effectiveness of short enrichment courses for adult writers. Their subjects were taught for two periods of 2 1/2 hours. David and Stine compared the results to the effectiveness of a 30-hour college writing course. The short course included rules of grammar, punctuation, and spelling; guidelines for concise, clear writing; audience analysis; and direct, negative, and persuasive letters and memos. The college course assumed proficiency in grammar, punctuation, and spelling.

David and Stine noted that the age and educational levels of the two groups were surprisingly similar. Data from three groups were compared: a college course control group that got the 30-hour college writing course; a treatment group that got the college course and the instruction on mechanics given to the adults in the short course, and the adults in the short course. Pretest mean scores for the three groups were not significantly different. All three groups showed improvement on posttests.

However, short course participants gained slightly more than college experimental students given the same instruction in mechanics. The short course participants gained more than three times as much as the college control students who had not received direct instruction on mechanics. (p. 17)

#### Indirect and Direct Measures of Writing Skills

A major problem with any evaluation is the method of assessment. This problem is especially acute for an evaluation of writing skill. The literature does not provide definitive guidance on assessment of writing skills is limited. Lut: (1983) wrote, 'I can find fewer than 200 item of research on the assessment of writing. . . . And many of the studies are incomplete, flawed, and simply badly done. In short, when we turn to the research literature for answers to our questions, we find little to help us' (p. 6).

Direct assessment requires that actual essays be written and usually such essays are read and scored independently by two or more readers. Indirect assessment, sometimes called objective assessment, requires no writing at all --the examinee only responds to stimuli in a multiple-choice format. Both direct and indirect assessment of writing skills have proved to be successful, but both have their advantages and disadvantages. (Breland & Gaynor, 1979, p. 119)

Specification of a standard method of evaluating writing is difficult. Spandel and Stiggins (1981) summarized some key advantages and disadvantages of direct and indirect assessment. Direct assessment techniques provide more information about the student's writing proficiency, more closely match real world writing tasks, have the potential for developing positive user attitudes, have relatively low development costs, and have high face validity. The disadvantages of direct assessment techniques are the potential lack of uniformity regarding the proficiencies assessed and the higher cost of scoring. Indirect assessment techniques have higher scoring reliability, have a relatively low scoring cost, and can exert a high degree of control over the skills assessed. The disadvantages of indirect assessment techniques are the reliance on reading and the lack of face validity. Halpin and Halpin (1982), Braddock, Lloyd-Jones, and Shcer (1963), Scherer (1985), French (1961), and Breland (1983) have concurred with these basic advantages and disadvantages.

Noyes, Sale, and Stalnaker (1945) favor the use of standardized tests for measuring writing skills. Clark (1980) described their increasing popularity.

Diedrich (1946) and Eley (1955) favor the use of direct assessment. O'Donnell (1984) and Huot (1990) described their increasing popularity.

Breland and Gaynor (1979) defended direct assessment, but only when multiple samples, and multiple readings of each sample, are obtained. Usually, however, such elaborate direct assessment techniques cannot be used and, consequently, practical interest

must focus on techniques requiring less time and effort' (p. 120). These authors agree and favor the use of indirect assessments when they can be shown to be as valid as direct measures. The relative validity of indirect and direct measures remains an open issue.

### Research Questions

The following research questions were investigated in this study:

Research Question 1: For officers scoring less than 40 on the initial indirect measure and who take the communicative skills and enrichment programs, are there any statistically significant differences between the scores on indirect measures of writing skills, taken at the start and at the end of the communicative skills and enrichment programs? This question addresses the impact of a communicative skills and enrichment program on poorer writers.

Research Question 2: For officers scoring 40 or higher on the initial indirect measure, are there any statistically significant multivariate and/or univariate differences in the indirect measures of writing skills, the direct measures of writing skills, or the cumulative course averages of those officers who take the enrichment program in addition to the communicative skills program compared to those officers who take only the communicative skills program? This question addresses the impact of a communicative skills and enrichment program on better writers.

Research Question 3: Are there any statistically significant relationships between officers' scores on the indirect measures of writing skills as measured by the Test of Standard Written English (TSWE) and the same officers' scores on the direct measures of writing skills as determined in the communicative skills program of the Military Police Officer Basic Course? This question addresses the relationship between the indirect and direct measures of writing assessment used in this program.

Research Question 4: Are there statistically significant multiple and/or bivariate relationships between officers' direct and indirect measures of writing skills when correlated with the same officers' cumulative Military Police Officer Basic Course averages? This question addresses which method of assessment provides the best predictor of performance in the overall educational program.

## METHOD

### Subjects

Subjects for this research were 137 U.S. Army officers who were students in the Military Police Officer Basic Course during January through June of 1987. The officers were attending their initial formal Army training following commissioning as lieutenants. Over half were members of the reserve components and returned to civilian life at the end of the course.

Demographic data from students attending fiscal year 1986 classes were analyzed to determine if any demographic categories would have a meaningful and significant impact on this study. The

only demographic category which met the meaningful (contributing over 10% of the total variance) and significant ( $p < .05$ ) requirements was career status. Career status, active versus reserve, produced 10.31% of the total variance. The significance level of the career status variable was greater than .0001.

Officers scoring a scaled score of 40 or above on the TSWF were sorted into groups of active and reserve component officers and then were randomly assigned into two experimental groups based on the last four numbers in their social security numbers. All officers scoring below a scaled score of 40, Group 3, were required to take the enrichment program in accordance with a directive which states, officers 'not meeting prescribed diagnostic standards will take mandatory remedial training concurrently with the 16-hour block of instruction' (Department of the Army, 1986, August, p. 5). Each of the three groups was composed of officers from each of the three classes.

#### Programs

A communicative skills program, enrichment program, and the relationships of these programs to the cumulative course averages in the Military Police Officer Basic Course were analyzed in this study. A description of each of the programs follows.

#### The Military Police Officer Basic Course

The Military Police Officer Basic Course was a 15-week course. The average work week lasted over 56 hours. Periodic performance, academic, career progression, leadership, and

personal counselling were conducted by supervisors after the academic day was complete.

#### The Communicative Skills Program

The communicative skills instruction lasted 16 hours. It included two graded writing requirements, the diagnostic indirect assessment, and four more graded writing requirements. "Basic course officers not meeting prescribed diagnostic standards [a scaled score of 40 on the TSWE] will take mandatory remedial training concurrently with the 16-hour block of instruction and be diagnostically retested near course-end" (Department of the Army, 1986, January, p. 5).

#### The Enrichment Program

The enrichment program, as the required remedial program was called, started after the second hour of the communicative skills program and was completed before the eighth hour of the communicative skills program.

The enrichment program consisted of a self-paced programed text and classroom instruction. Officers had five scheduled meetings with an instructor. These meetings consisted of a review of the assigned enrichment materials, a question-and-answer session, and a review to verify the progress of the officers. Homework was assigned during the enrichment program. The average officer spent 15-20 hours completing the enrichment program, including the homework.

Measures

## Graded Writing Assignments

During the communicative skills program, officers receive 33 writing assignments, six of which will be graded out-of class written assignments' (U.S. Army Military Police School, 1986, October, p. E-1) The general instructions provided to the officers for the graded assignments included, 'The length of your writing assignment is important. Your instructor will not prescribe an exact length, but your writing must deal with your subject in sufficient depth to be useful to a decision-maker [and] Suspenses are important in our profession. You must submit work on time' (U.S. Army Military Police School, 1986, January, p. 3).

The six graded written assignments are writing requirements that a lieutenant frequently will write once assigned to an operational military police unit. In this way, the students received instruction in communicative skills and also were being acclimated to typical duties and responsibilities of a new officer.

Each paper received a grade of superior, satisfactory, barely satisfactory, or unsatisfactory. Additionally, each officer wrote an extemporaneous paper during the first hour of instruction. The extemporaneous paper was used as a diagnostic tool and normally was not graded. The six graded written exercises in the existing program were used in this study. The relative weight assigned to each graded writing assignment was based on the relative difficulty and complexity of the assignment.

The method of assigning grades of superior, satisfactory, barely satisfactory, and unsatisfactory for an exercise was well described. The items listed on the Communicative Skills Grade Sheet (Appendix A) did not, by themselves, determine the grade. An unsatisfactory paper was not understandable. A barely satisfactory paper was an exercise that could be understood, but only with difficulty. A satisfactory exercise was a paper in which the meaning of all parts of the writing exercise was clear, but there was one or more parts of the exercise that had significant errors. A superior rating was given to a paper which met the Army standard of a paper 'that can be understood in a single rapid reading and is generally free of errors in grammar, mechanics, and usage' (Department of the Army, 1985, April, p. 3).

In the regular communicative skills program, one instructor graded all papers for spelling, format, and grammar. This one instructor annotated each papers by identifying all spelling and grammar errors. Feedback was provided to the student officer for spelling errors by inserting the correct spelling. Feedback also was provided to the student officer for grammar errors by inserting the paragraph number of the paragraph in the Harbrace College Handbook (Hodges & Whitten, 1986) in which the error is explained. All student officers were given a copy of the Harbrace College Handbook for their use during the course. A second grader, the supervisor of the first instructor, reviewed the grades, evaluated style and content, and assigned an overall grade.

### The Test of Standard Written English (TSWE)

The TSWE was 'a 30-minute multiple-choice examination that assesses the ability to use the conventions of standard written English' (Breland, 1977a, p. 1). The TSWE was a product of the Educational Testing Service and was designed for initial screening for college placement services (Breland, 1977b).

Scoring on the TSWE was designed to parallel the Scholastic Aptitude Test. Scaled scores on the TSWE range from 20 to 60+. A TSWE scaled score of 20 to 60 would correspond to Scholastic Aptitude Test scaled scores of 200 to 600. Because the TSWE is designed as a rather easy test, a Scholastic Aptitude Test score above 600 would correspond to a TSWE scaled score of 60+. There were two parallel versions of the TSWE.

Two types of items are included in the TSWE: usage and sentence correction. Usage items require recognition of writing that does not follow the conventions of standard written English; sentence completion items not only require recognition of unacceptable phrasing, but also choice of the best way of rephrasing the offending sentence component. (Cohn, 1985, p. 361)

Cohn found the TSWE to be a reliable instrument with a reliability of around .88, as measured by the Kuder-Richardson 20 formula and a median test-retest reliability of .82. Suddick (1981) has established the validity of the TSWE for use with older students.

#### Procedure

Students proceeded with their normal schedule until after taking the initial TSWE. Officers in Group 1, half of those initially scoring 40 or above on the initial TSWE, went through

the communicative skills program in the normal manner. Officers in Group 2, the other half of those initially scoring 40 or above on the initial TSWE, went through the communicative skills program, with the addition of the enrichment program, in the normal manner. Officers in Group 3, those initially scoring less than 40 on the initial TSWE, went through the enrichment program and the rest of the communicative skills program in the normal manner. All groups took a second TSWE at the end of the entire communicative skills program and then completed the officer basic course in the regularly scheduled manner.

Four graded writing assignments were done after the enrichment program. These four writing assignments were used in this study to determine the communicative skills score.

All scheduled students attended all sessions of the enrichment program. All students also completed all homework assignments.

#### Scoring

Grading of writing exercises was done independently by the class evaluator, the supervisor, and the first author.

The first author was trained on the evaluation procedures and standards used by the current evaluators. This researcher spent approximately 20 hours on the initial training.

The first two writing assignments were not used in computing overall communicative skills scores because an intervention, the enrichment program, was underway. However, these two writing assignments were used as calibration tools and as additional training exercises to maintain interrater consistency.

Interrater reliability was determined for each exercise using correlation techniques. The interrater reliabilities for each exercise, and for all exercises combined, varied from .7195 to .9362 and was significant ( $p < .0001$ ) in each case.

### Results and Discussion

Each research question was analyzed separately. The data analysis and results will be addressed separately for each question. All statistical analyses were done on a version of SAS designed for microcomputers.

#### Research Question 1

For officers scoring less than 40 on the initial indirect measure and who take the communicative skills and enrichment programs, are there any statistically significant differences between the scores on indirect measures of writing skills, taken at the start and at the end of the communicative skills and enrichment programs?

Variables used in evaluating this hypothesis were scaled scores on the first TSWE for officers in Group 3 and scaled scores on the second TSWE for officers in Group 3.

#### Statistical Procedures

Descriptive statistics for these data were computed. (Similar data were also computed for Groups 2 and 3 for use in addressing other questions in this study.)

The comparison of the differences, and the significance of the differences, between the initial and the final TSWE for those officers taking the enrichment program were computed by an analyses of variance using an F test.

### Results

Descriptive data for initial and subsequent TSWE scores for each group and for all groups combined are displayed in Table 1.

Table 1

DESCRIPTIVE DATA FOR INITIAL AND SUBSEQUENT  
INDIRECT WRITING MEASURES

| Writing measure       | <u>M</u> | <u>SD</u> | <u>SE</u> | <u>n</u> |
|-----------------------|----------|-----------|-----------|----------|
| Initial TSWE          |          |           |           |          |
| Group 1               | 48.72    | 6.26      | 1.00      | 39       |
| Group 2               | 48.33    | 5.99      | 0.95      | 40       |
| Group 3               | 31.28    | 5.62      | 0.74      | 58       |
| All groups (combined) | 41.22    | 10.37     | 0.89      | 137      |
| Second TSWE           |          |           |           |          |
| Group 1               | 46.41    | 8.07      | 1.29      | 39       |
| Group 2               | 47.92    | 8.39      | 1.36      | 38       |
| Group 3               | 34.75    | 8.91      | 1.18      | 57       |
| All groups (combined) | 41.88    | 10.48     | 0.91      | 134      |

The mean score of the indirect measures of writing skills taken after the enrichment program (34.75) is significantly higher

than the mean score of the indirect measures of writing skills taken before the enrichment program (31.28) for officers in Group 3,  $F(1,55) = 29.85, p < .0001$ .

### Research Question 2

For officers scoring 40 or higher on the initial indirect measure, are there any statistically significant multivariate and/or univariate differences in the indirect measures of writing skills, the direct measures of writing skills, or the cumulative course averages of those officers who take the enrichment program in addition to the communicative skills program compared to those officers who take only the communicative skills program?

Variables used in evaluating this hypothesis were cumulative weighted and combined score on exercises three, four, five, and six for officers in Groups 1 and 2; the scaled scores on the final TSWE for officers in Groups 1 and 2; and cumulative course averages for officers in Groups 1 and 2.

### Statistical Procedures

Descriptive statistics for each of these data were computed. (Similar data were also computed for Group 3 for use in addressing other questions in this study.) A multivariate analysis of variance and a Wilks' lambda then were used. The multivariate analysis of variance also produced measures of significance, evaluated by a series of  $F$  tests. The dependent measures were the indirect and direct measures of writing skills and also the cumulative course averages. The independent variable was taking,

or not taking, the enrichment program (placement in Group 1 or Group 2).

### Results

Descriptive data for initial and subsequent direct measures of writing skills are displayed in Table 2.

Table 2

DESCRIPTIVE DATA FOR INITIAL AND SUBSEQUENT  
DIRECT WRITING MEASURES

| Writing measure                          | <u>M</u> | <u>SD</u> | <u>SE</u> | <u>n</u> |
|--|----------|-----------|-----------|----------|
| Diagnostic exercise <sup>a</sup>         |          |           |           |          |
| Group 1                                  | 2.12     | 0.80      | 0.13      | 37       |
| Group 2                                  | 2.16     | 1.10      | 0.16      | 40       |
| Group 3                                  | 1.33     | 1.03      | 0.14      | 58       |
| All groups (combined)                    | 1.79     | 1.04      | 0.09      | 135      |
| Weighted and combined score <sup>b</sup> |          |           |           |          |
| Group 1                                  | 379.97   | 82.72     | 13.25     | 39       |
| Group 2                                  | 413.68   | 65.89     | 10.69     | 38       |
| Group 3                                  | 349.05   | 72.77     | 9.64      | 57       |
| All groups (combined)                    | 376.38   | 78.19     | 6.75      | 134      |

<sup>a</sup>Scores for writing exercises were 0 (for unsatisfactory), 1 (for barely satisfactory), 2 (for satisfactory), or 3 (for superior).

<sup>b</sup>The total possible weighted and combined points were 480.

There is no statistically significant multivariate difference when comparing the indirect and direct measures of writing skills and the cumulative course averages based on whether or not officers took the enrichment program in addition to the regular communicative skills program. When comparing officers in Group 1 to officers in Group 2, the only variable which approaches significance is the direct measure of writing skills,  $F(1,75) = 3.90$ ,  $p = .0520$ . However, because there is no significant multivariate difference,  $F(3,73) = 1.73$ ,  $p = .1669$ , the univariate differences are assumed to be a result of chance occurrence.

### Research Question 3

Are there any statistically significant relationships between officers' scores on the indirect measures of writing skills as measured by the Test of Standard Written English (TSWE) and the same officers' scores on the direct measures of writing skills as determined in the communicative skills program of the Military Police Officer Basic Course?

Variables used in evaluating this hypothesis were scores on the first diagnostic writing exercise; scaled scores on the first TSWE for all officers; the cumulative weighted and combined score on writing exercises three, four, five, and six; and the second TSWE scaled scores for all officers.

### Statistical Procedures

Initial indirect and direct measures of writing skills were summarized and analyzed using standard descriptive statistics.

Indirect and direct measures of writing skills completed after the enrichment program also were summarized and analyzed using the same procedures. Correlations of the diagnostic writing exercise to the first TSWE for all three groups combined were derived and then analyzed using correlation analyses and a F test.

Comparisons of the cumulative weighted and combined scores on the last four graded writing exercises to the scaled scores on the second TSWE for all three groups combined also were derived and then analyzed using correlation analyses and a F test.

Correlations relating either the first or the second TSWE to each group separately were not computed since the basic design used in defining the group limited the range of scores for each group on the initial TSWE.

Houston has suggested determining a coefficient of determination and an index of forecasting efficiency for use in determining the efficacy of relating different instruments. The coefficient of determination is the amount of the variability of the dependant variable(s) that can be predicted from the independent variable(s). The index of forecasting efficiency is a measure of the improvement, if any, in the prediction of how well subjects would do on the dependant measure(s) based on the score on the independent measure(s) compared to a random estimate. The coefficient of determination and the index of forecasting efficiency were determined for all three groups combined for both the initial and the second TSWE.

Results

There is a significant overall relationship between officers' scores on the initial indirect measure and the same officers' scores on the initial direct measure of writing skills. Additionally, there is a significant overall relationship between officers' scores on the subsequent indirect measures and the same officers' scores on the subsequent direct measures of writing skills. These data are displayed in Table 3.

Table 3

RELATIONSHIPS BETWEEN DIRECT AND INDIRECT  
WRITING MEASURES BEFORE AND AFTER  
THE ENRICHMENT PROGRAM

| All groups combined | <u>r</u> | <u>P</u> | <u>CD</u> | <u>IF</u> |
|---------------------|----------|----------|-----------|-----------|
| Before enrichment   | .4469    | <.0001   | .1997     | .1034     |
| After enrichment    | .4154    | <.0001   | .1725     | .0904     |

Note. CD is the coefficient of determination. IF is the index of forecasting efficiency.

## Research Question 4

Are there statistically significant multiple and/or bivariate relationships between officers' direct and indirect measures of writing skills when correlated with the same officers' cumulative Military Police Officer Basic Course averages?

Variables used in evaluating this hypothesis were cumulative course average for officers in Groups 2 and 3; cumulative weighted and combined score on writing exercises three through six for officers in Groups 2 and 3; and scores on the second TSWE for officers in Groups 2 and 3.

### Statistical Procedures

Descriptive data for the cumulative course average were computed for officers in each group and for all three groups combined and analyzed using standard descriptive procedures. (Although data on the cumulative course average for Group 1 are not needed to address this question, these data are needed later in this study.) Descriptive data for the direct and indirect measures of writing skills subsequent to the enrichment program were already computed.

The relationships between the cumulative course averages and the cumulative weighted and combined scores on writing exercises three, four, five, and six and between the second TSWE scaled scores were then computed using stepwise multiple regression analysis and then analyzed using correlation analyses and a F test. Separate F tests were used to analyze the relationship between the each variable entered into the equation and to analyze the significance of the change in the relationship when the second variable was entered into the equation.

### Results

Shown in Table 4 are descriptive data for the officers'

cumulative course averages, by group and for all groups combined. Data for officers in Groups 2 and 3 were used in addressing this research question. Data for officers in Group 1 were not used in the analysis of this question because their range of skills is restricted based on the results of the initial indirect measure of writing skills. Descriptive data for the officers in Group 1 are shown, however, because of the relevancy in addressing other questions.

Table 4

DESCRIPTIVE DATA FOR THE CUMULATIVE  
OFFICER BASIC COURSE AVERAGES

| Group number          | <u>M</u> | <u>SD</u> | <u>SE</u> | <u>n</u> |
|-----------------------|----------|-----------|-----------|----------|
| Group 1               | 88.99    | 4.36      | 0.70      | 39       |
| Group 2               | 88.48    | 3.53      | 0.57      | 38       |
| Group 3               | 85.79    | 4.52      | 0.60      | 57       |
| All groups (combined) | 87.48    | 4.44      | 0.38      | 134      |

The cumulative course averages for Groups 2 and 3 were compared using stepwise multiple regression techniques to a model combining the direct and indirect measures of writing skills and then to the direct and indirect measures separately. There is a statistically significant relationship between the indirect measures of writing skills and the cumulative course average,  $F(1,93) = 40.46, p < .0001$ . When the data for the direct measures of writing skills are added to the model, there is a statistically

significant relationship between the combined measures of writing skills and the cumulative course averages for officers in Groups 2 and 3,  $F(2,92) = 20.59$ ,  $p < .001$ . However, the incremental improvement in the prediction model, resulting from the inclusion of the direct measures, is not significant,  $F(2,92) = 0.55$ ,  $p > .05$ .

### GENERAL DISCUSSION

This study's findings show that the enrichment program did significantly improve writing skills of officers initially getting lower scores on the initial indirect measure of writing skills, although the enrichment program did not improve the writing skills of officers initially scoring higher on the initial indirect measure or their performance in the overall course. The moderate and typical relationship between indirect and direct assessment techniques was confirmed, at least for the instruments used in this study. Also, the indirect assessments have essentially the same ability to predict overall course averages as the combined use of indirect and direct measures. This statement supports the conclusion that those who improve their writing performance will, in fact, improve their performance in educational programs in general.

Other important issues remain regarding the writing of college educated professionals. Additional data are needed in the area of relating communicative skills to success of college educated professionals. Effective communicative skills are assumed to be a requirement for success, but empirical data to

support this assumption are limited. Additional data are also needed on the value of existing college curricula. Many of the complaints are concerning college educated professionals. If writing skills are required for professional success, and college is the gateway to the professional world, then existing college courses need to be evaluated for their effectiveness in meeting the needs of their students.

Alternative curricula for communicative skills and remedial enrichment programs should be investigated for their application. David and Stine (1984) showed significant improvements in writing based on a short course similar to the course in this study; yet there are mixed results concerning significant improvement in writing skills resulting from the communicative skills course in this study. Alternative curricula for remedial enrichment programs also need a significant amount of additional research.

In conclusion effective writing programs would significantly improve the productivity of college educated professionals. They would significantly improve productivity and save millions of dollars annually.

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APPENDIX A  
COMMUNICATIVE SKILLS  
GRADE SHEET

## COMMUNICATIVE SKILLS GRADE SHEET

Assignment: \_\_\_\_\_

Evaluation

- Superior  
 Satisfactory  
 Barely Satisfactory  
 Unsatisfactory

Name: \_\_\_\_\_

Course: \_\_\_\_\_

Faculty Adviser: \_\_\_\_\_

Clarity Index: \_\_\_\_\_

Substance

- Inadequate  
 Main idea poorly supported  
 Unity lacking  
 Other major errors

Organization

- Purpose unclear  
 Main idea not immediately apparent  
 Coherence lacking  
 Other major errors

Style

- Verbose  
 Too much jargon  
 Too many long words  
 Too many weak verbs  
 Excessive use of passive voice  
 Sentences too long  
 Paragraphs too long  
 Other major errors

Correctness

- Errors in spelling  
 Errors in sentence construction  
 Errors in punctuation  
 Other major errors

## -- Key to Correction Symbols --

|                |                                |        |                                    |
|----------------|--------------------------------|--------|------------------------------------|
| S              | misspelled word                | P      | improper punctuation               |
| Frag           | sentence fragment              | Agr    | faulty subject-verb agreement      |
| CS             | comma splice                   | Pas    | inappropriate use of passive voice |
| Ref            | unclear pronoun reference      | W      | wordy                              |
| <del>Ref</del> | delete                         | A      | omission                           |
| #              | faulty parallelism             | Dng/MH | dangling or misplaced modifier     |
| SC             | improper sentence construction | U      | improper usage                     |
| Cap            | improper capitalization        |        |                                    |