NO80-630 ERIC REPORT RESUME

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EFFECTIVENESS OF AN INTEREST-MOTIVATED APPROACH TO JUNIOR COLLEGE REMEDIAL ENGLISH INSTRUCTION.

GUNTER, GJ G. *MCNITT, HELEN
YOA83201 YORK JUNIOR COLLEGE, PA.

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EDRS PRICE MF-$0.09 HC-$2.04 51P.

*REMEDIAL COURSES, REMEDIAL INSTRUCTION, *ENGLISH INSTRUCTION, *TESTING, PRETESTING, POST-TESTING, *PERFORMANCE, ACADEMIC PERFORMANCE, *MOTIVATION, YORK, PENNSYLVANIA

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EFFECTIVENESS OF AN INTEREST-MOTIVATED APPROACH TO JUNIOR COLLEGE REMEDIAL ENGLISH INSTRUCTION

Cooperative Research Project No. 2856

G. O. Gunter and Helen McNitt

York Junior College

York, Pennsylvania

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THE PROBLEM

In view of the large number of junior college applicants who are adequately prepared for most college studies but who are deficient in writing skills, nothing is more important in the field of education than the development of an effective course in remedial English. During several years prior to the beginning of the experiment reported here, York Junior College conducted a number of small experiments in remedial English, all of which followed rather traditional practices (grammar drill, diagramming, writing expository themes based upon standard readings, etc.). However, it became clear to the teaching personnel involved that the techniques and materials employed did not produce appreciably improved results. The students' lack of interest was apparent, and the drop-out rate was comparatively high.

It therefore seemed clear to members of the Department of English that a non-conventional approach ought to be attempted-- one which would present the study of English composition in a more practical light and which would capitalize upon existing student interests. This seemed reasonable especially in view of the fact that most remedial classes contained several students who appeared to be completely capable of organized, effective thinking and who had a suitably wide range of college-level interests, but who had never worked to capacity in English courses either in high school or in college. The Department of English therefore proposed an experimental project in curriculum improvement in which the traditional techniques would be held to a minimum and in which student interests-- whatever they might be-- would serve as points of departure for subject-matter dealt with in discussions, readings, and writing assignments.

Salvaging the low achiever is, of course, a national problem with which junior colleges are especially concerned. York Junior College, like most similar institutions, is committed to offer post-high-school courses of study to young men and women who appear to be capable of profiting from them. Many of our applicants are the first in their families to attempt studies beyond the secondary level. Some are uncertain of the value of academic studies and perform at levels considerably below their capacities. Our admissions policy therefore permits a number of low achievers to enter the College under a probationary status if recommendations and tests indicate a reasonable possibility of improvement. York Junior College is attempting to provide an environment in which low achievers can receive such assistance and encouragement as will enable them to overcome deficiencies and to function on a satisfactory academic level.

OBJECTIVES

The primary objective of this research project was to evaluate the effectiveness of an interest-motivated method of instruction in remedial English. The experimental course involved here was designed to enable the remedial student (who falls in the lower forty percent of his high school graduating class) to improve his skills during two semesters and then to enter the regular freshman English course.

It was hoped that the proposed course would give the student an increased interest in reading and in writing, develop his awareness of the structure of the language, and convince him of the intellectual and practical values of writing skills. It was hoped, furthermore, that such a course would result in a lower drop-out rate than in previous remedial

courses at the College, that most students involved would remain in college for at least two years, and that a greater percentage than heretofore would continue for four years.

It has been our plan that if the proposed course proved to be superior to the traditional course, the College would adopt it for all remedial English instruction. Furthermore, the College would publish its findings for the benefit of other colleges.

In planning the experiment, the directors became aware of the importance of a secondary objective: the creation of a method of scoring student essays which would eliminate, to an appreciable extent, subjective judgment on the part of the scorer. Thus it was eventually decided to score all essays according to three categories: mechanics, organization, and intellectual content. The scoring of mechanics was to involve a simple count of specified major errors, which would be considered in relation to the total number of words in the essay. Organization and intellectual content, however, would be scored by means of nine-point scales, each involving nine questions which could be answered in the affirmative by the scorer's check mark on a scoring sheet.

The directors of the project realized that the creation of objective methods of scoring organization and intellectual content presented a very great challenge, but that if effective methods could be devised they would be among the most significant results of the experiment. Obviously, objective methods of grading students' essays are much sought by instructors of English composition, and success in this area could be of immense benefit to secondary schools and colleges.

RELATED RESEARCH

Current articles and reports in educational journals indicate that salvaging the low achiever and the under achiever has become an increasingly important function of the junior college. Such articles also indicate that the plan followed in this project is educationally sound, that it is reasonably original, and that the research design is in accordance with expert practices. Concerning the first point, an article by Kitzhaber, for example, states that the disappearance of remedial English courses from four-year colleges during the past few years does not signify an increase in the intellectual force among our young people. Neither does it signify that high schools have solved the problem of teaching all students to write well. Rather, it indicates that most college students with English deficiencies are now taking remedial courses at junior colleges.[1]

Another article states that educational competition with Russia during the past few years has resulted in an emphasis upon the training of gifted students. However, the author reminds us, every scientific genius of the future will need the support of numerous competent workers who are only moderately well educated. Therefore, there is a great need for more slowly paced instruction, with considerable individual attention, in order to salvage for useful lives of service those students who are deficient in writing skills.[2] As explained throughout this report, York Junior College has attempted to develop a remedial English course which will enable the

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[1] Albert R. Kitzhaber, "Freshman English: A Prognosis," College English, XXIII, March, 1962, 476-483.

[2] Lucille MaWhinney and Marvin Sitts, "Remedial Writing Remedies," Adult Leadership, X, November, 1961, 145, 154.

low achiever to improve his writing skills and which will enable him to pursue at least two years of regular college work.

Research also indicates the validity of the psychological approach made in this project. For example, a study made at Worcester Polytechnic Institute showed that motivation was greatest in courses which offered practical value in making a living.[3] The instructors in the experiment reported here stressed the practical value of being able to write acceptably in any employment situation, and they attempted to convince the students of this value by associating writing with the expression of the students' greatest interests.

A very scholarly article titled "Motivation in Freshman English" states that motivation exists when a student's school work seems purposeful because it is related to his experience, questions, problems, and desires. This article states further that most students are very much concerned with acquiring wealth, competing with their peers, improving themselves in various ways, overcoming difficulties, and achieving vocational and social success. Thus, the English teacher must associate the class work with the students' goals, and he must provide considerable individual attention.[4] The York Junior College project outlined here attempted to achieve these objectives.

Another article, titled "Personal Reading and Writing," states that experience in teaching core subjects in high school has shown that when students are allowed considerable choice in reading, they are usually very

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[3]Joseph F. Zimmerman, "What Motivates Students?" The Journal of Higher Education, XXVII, November, 1956, 449-453.

[4]Emerson R. Loomis and John M. Adams, "Motivation in Freshman English," Improving College and University Teaching, X, Autumn, 1962, 183-186.

much interested in presenting their ideas in well-written, creative reports. This article also states that it is important for the instructor to explore the interests of the group and to promote considerable discussion. If each individual in the group feels secure and well-disposed toward others, the writing will be sincere and deeply meaningful to the student.[5] Similar ideas are presented in an article titled "Group Dynamics Techniques and the Teaching of Composition."[6] Important points in the York Junior College project included the pursuit of individual interests in reading and writing and the use of considerable discussion in order to clarify ideas, to facilitate the reasoning process, and to arrive at a sense of values.

Research indicates, furthermore, that the course outlined in this report is essentially original, although it bears certain resemblances to experiments and ideas described in various articles. For example, an experiment integrating English composition with a five-semester course in humanities studies was conducted several years ago at the Cooper Union School of Engineering. The humanities studies were closely correlated and were designed to reveal the complexity of human culture. Writing assignments generally involved problems in human relations, and they included reports upon observations and essays on controversial subjects.[7]

Clearly, the experiment pursued by York Junior College involved the elements described above, especially since sociological matters proved to be highly important in the students' interests. But there the similarity

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[5]Martin Blum, "Personal Reading and Writing" The English Journal, XLIV, January, 1955, 36-37.

[6]Bernard Knieger, "Group Dynamics Techniques and the Teaching of Composition," The Journal of Communication, XI, December, 1961, 220-223, 240.

[7]Kingman Grover, "Freshman English as an Introduction to the Humanities," College English, XV, February, 1954, 284-287.

ends. Our plan was much more flexible than the rather tightly organized course at The Cooper Union School of Engineering. Furthermore, our plan concerned remedial students only, it concerned students who planned to enter a large variety of vocational fields, and it included considerable class discussion--something apparently not included in the above-mentioned experiment.

The York Junior College plan was perhaps more closely related to a suggested course of study--not an actual experiment--presented in an article titled "Science Visits an English Classroom." This article suggests that the English teacher include scientific research as a means of increasing the student's interests and expanding his knowledge.[8] In spite of similarities, the York Junior College project involved an actual experiment the results of which were verified, it placed improved writing--not increased knowledge--as the ultimate objective, it was a remedial plan, and it permitted a much wider range of subject-matter.

An article titled "We Can't Ignore the Mass Media" may be mentioned. Here the author proposes a course of study for students who will never go beyond the high school level. He states that these students will have "real life" dealings with the English language mainly through magazines, newspapers, radio, television, and occasional business letters. Therefore, an English course might well make a study of these media of communication, showing their purposes and characteristics and their place in ordinary life.[9]

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[8]Kathleen B. Dowling, "Science Visits an English Classroom," The English Journal, XXXXVIII, March, 147-149.

[9]Charles N. Nevi and Lloyd Hoffine, "We Can't Ignore the Mass Media" The English Journal, LI, November, 1962, 560-564.

Many similarities may be found between this proposal and the plan devised by York Junior College: the use of magazines and newspapers, the practical approach to language usage, and, in some cases, the "terminal" type of student. However, as has been explained heretofore, the York Junior College project was more comprehensive. It included discussion groups, research, and considerable writing for the sake of good writing, factors which do not appear in the above-mentioned proposal.

Articles and reports dealing with research design support the plan appearing in this report. To begin with, more than one article[10] stresses the importance (and actual necessity) of obtaining expert advice when creating a research design. Taking advantage of this suggestion, York Junior College obtained the assistance of trained and experienced educational psychologists from The Pennsylvania State University. As a result, the design presented here shows considerable sophistication and is in accordance with suggestions found in recent scholarly articles.

For example, an article by Theodore Clymer[11] points out the value of the "null hypothesis" in making comparisons, and hypothesis used in the evaluation of the data gathered in the experiment presented here. The same article stresses the importance of careful planning of all details

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[10] John S. Diekhoff, "Some Important Research Gaps in the Teaching of College English," in Steinberg, ed., Needed Research in the Teaching of English, U.S. Office of Health, Education and Welfare, Office of Education, 1963, 22.

and

N. L. Gage, "Research Design with Special Reference to the Teaching of English," in Wasson, ed., Proceedings of the Allerton Park Conference on Research in the Teaching of English, The United States Office of Education, 1962, 77-78.

[11] Theodore Clymer, "Research Design in the Language Arts," in Singleton, ed., Research Methods in the Language Arts, National Council of Teachers of English, 1961, 12-17.

of the design so that data analysis will be meaningful, the importance of a carefully controlled experiment involving suitable coordination of teaching activities in experimental and control groups, the importance of proper teacher assignments to the group, and the value of follow-up study. These matters are all reflected in the York Junior College design.

Another article[12] indicates the use and significance of the following factors which have been given careful attention in the design contained here: dependent and independent variables, control groups, the random process of assigning persons to experimental and control groups, and pre-tests and post-tests. A somewhat similar article[13] dealing with research methods points out the need to control variables where assignments and grading are concerned. The project presented in this proposal shows a number of safeguards in this respect. An additional article[14] describes a two-year experiment in teaching generative grammar to ninth and tenth graders, an experiment sponsored by a grant from the U. S. Office of Education. Provisions for experimental and control groups, randomized assignment of personnel involved, and emphasis upon sentence structure show similarities to the York Junior College design.

Another significant article, by Henry L. Meckel,[15] supports a number of factors involved in our research design. The article advocates ex-

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[12] Gage, op. cit., pp. 79-84.

[13] Richard Braddock, et al., "Suggested Methods of Research," Research in Written Composition, National Council of Teachers of English, 1963, 7-12.

[14] Frank J. Zidonis, "Generative Grammar: A Report on Research," The English Journal, LIV, May, 1965, 405-409.

[15] Henry L. Meckel, "Research in Teaching Composition and Literature," in Gage, ed., Handbook of Research on Teaching, Chicago, Rand McNally and Company, 1963, pp. 968-988.

pository writing, rather than imaginative creations or compositions based upon personal experiences; it refers to various experiments which indicate the inutility of formal grammar study, as far as improving English composition is concerned; it indicates that the classroom study of sentence errors appearing in student themes may be one of the most profitable activities in a freshman English course; and it offers suggestions by Paul Diederich that student writing be related to real life activities and that certain specific standards be employed to increase the reliability of the evaluation and comparison of students' themes.

Finally, a most important project undertaken by the College Entrance Examination Board[16] bears a certain similarity to the project reported here in that it attempted to develop objective criteria for determining a student's ability in English composition. This College Board project dealt with students in the last two years of high school rather than students in the first year of college, and it included both objective tests and various types of written assignments rather than written assignments alone. The overall testing was therefore more elaborate than that of the present project. On the other hand, the scoring of the written assignments, which involved only three possible grades, was less complex than that undertaken in the York Junior College project.

Thus, compared with various educational ideas and actual experiments made, the project reported upon here seems to have had meaningful aims, and its design appears to follow recognized procedures.

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[16]Fred I. Godshank et al., The Measurement of Writing Ability, New York, College Entrance Examination Board, 1966, pp. 6-11.

PROCEDURE

Subjects and Grouping

All students involved in the project were persons who had graduated from high school in the lower forty percent of their classes. They were admitted to the College on a probationary basis and assigned to the remedial English course by the Director of Admissions and his committee. Such students are regularly admitted to the College if one or more of the following factors seem to indicate that the student can profit from post-high-school studies: high school English grades, College Entrance Examination Board scores, ACE Scholastic Aptitude Test scores, general mental ability test scores, and statements from guidance counsellors.

The students involved in the project were placed in eight groups, each group consisting of approximately eighteen persons. Though the basic project design called for only fifteen students in each group, it was deemed advisable to commence this two-semester course with a larger number in order to make sure that drop-outs would not deplete class sizes during the second semester. (This judgment proved to be wise, for second-semester classes averaged fifteen students.) Assignment of students to the eight groups was made by a random process. Four of the groups were designated as experimental groups, and class procedure followed the interest-motivated method of instruction. The remaining four were considered control groups, and class procedure followed a traditional method. A total of two instructors was involved. Both methods and instructors were assigned in a random manner.

The following chart illustrates the project design:

Table I

PROJECT DESIGN

Instructor	Interest-Motivated Method		Traditional Method	
A_1	I N = 15	II N = 15	I N = 15	II N = 15
A_2	I N = 15	II N = 15	I N = 15	II N = 15
	$\bar{X}_1$		$\bar{X}_2$	

The relative number of men and women students in this project is to be noted. As had been true in previous years, most of the remedial English students were men. Of the 142 students beginning the project, 115, or 81 percent, were men.

Classroom Procedure

All classes involved in the project met three times weekly, for fifty minutes at each meeting. The courses, both experimental and control, ran concurrently and covered two fifteen-week semesters. The two instructors coordinated their methods, materials, and standards as fully as possible in regard to the two different types of classes.

The primary study materials employed in the four experimental groups were Newsweek magazine and selected newspapers. Each student in these groups received a copy of Newsweek during each week of classes. Also, at each class meeting during an eight-week period in each semester, students received newspapers. Newspapers employed for two-week and three-week periods included the Washington Post, the New York Times, the

Christian Science Monitor, the New York Herald-Tribune, and the Harrisburg Patriot.

The four classes comprising the experimental groups were conducted mainly on a seminar basis, with at least one-third of the time devoted to discussion. Through discussions the instructors attempted to determine student interests; and after the beginning of the course, discussions were based upon-- or at least carried out in close relation to-- readings found in Newsweek and the newspapers. Also, through the discussions the instructors attempted to enable the students to clarify their own thinking, to form reasonable opinions, and to express themselves effectively.

Previous experience had shown that many low achievers consider the subject-matter of traditional English courses to be abstract and artificial. Therefore, it was hoped that by encouraging students to pursue their own interests in reading, discussion, and writing, this experimental course would be of greater interest to them. It was also hoped that in this way boredom with seemingly impractical activities and confusion over difficult assignments might be lessened, thus lowering the drop-out rate. In spite of the fact that failing grades had rarely been given in previous remedial English courses at the College, the drop-out rate was sometimes as high as 22 percent before the end of the year.

As had been anticipated, students' interests were usually of a sociological nature, and every effort was made to encourage students to increase their knowledge in their areas of interest by more extensive reading. Particular attention was given to news items and articles dealing with such matters as politics, international relations, military service, career opportunities, and the attitudes and values of young people. To provide a certain amount of organization to class activities,

specific subjects were concentrated upon during three-week or four-week periods during each semester. Special subjects dealt with during the first semester were as follows: "Life Behind the Iron C rtain," "The Presidential Election," "Employment and the Economic Health of the U.S.A.," and "Individual Interests in the News." Approximately half of the second semester was devoted to "Career Opportunities." An informal research paper associated with this special subject, and requiring use of The Reader's Guide to Periodical Literature, was written. The second special subject of the semester was "Local Employment Opportunities," and letters of application were written in connection with this. The semester concluded with "Attitudes and Values of Students in the U.S.A."

Approximately one writing assignment was done each week, ranging in extent from one paragraph to an essay of 300-350 words. Writing was done both in class and outside. Just as the subject-matter of essays was based upon readings from Newsweek and newspapers, writing styles from news media were imitated. In an effort to promote interest in writing and to provide additional information regarding good written communication, four newspapermen were brought in as guest lecturers during the first semester. They discussed the news story, the feature article, the editorial, and the column.

Techniques of good writing were constantly brought up informally and discussed briefly in association with readings and written assignments. Much emphasis was placed upon the individual sentence as a unit of thought to be expressed as clearly and directly as possible. Punctuation and organization were also dealt with frequently, but informally; and students were encouraged to carry pocket dictionaries at all times in order to check their spelling. On a few occasions a rather concentrated study of writing techniques was made, generally through the use

of an overhead projector. For example, transparencies made from students' essays were projected and studied. All letters of application written during the second semester were carefully analyzed in this manner. The overhead projector, along with commercially prepared transparencies, was also employed for two or three class periods during preparation of the research paper.

The following chart illustrates the course content and procedure of control and experimental groups, and it shows contrasts between the two:

Table II

COURSE CONTENT

Traditional (Control) Group	Experimental Group
Grammar Study - Formal study & drill, using text	Grammar Study - Informal - based on errors appearing in writing
Readings - From text & Atlantic	Readings - From Newsweek & newspapers
Themes - Expository mainly In third person only Of paragraph length and 300-350 word length Based on readings, & sometimes imitations of readings	Themes - Newspaper style as used in news story, feature article, and editorials
Discussion - Based on readings	Discussion - Based on readings
Guest Lectures - On literature & formal writing Persons recognized for literary background	Guest Lectures - On news media & communication Professional newspapermen
Research - On language & literature	Research - On news & other sociological topics
Spelling Study - Formal, from text	Spelling Study - Informal, from errors in writings
Sentence Study - Formal, & informal based on errors in writing	Sentence Study - Informal, based on readings and errors in writing
Organization Study - Formal - of paragraphs and themes of 300-350 words	Organization Study - Informal - based on readings Themes of 300-350 words

Data Gathered

1. Test data. During Orientation Week, at the beginning of the first semester, linguistic scores on the ACE test were obtained from all students placed in the experimental and control groups.
2. Writing Samples.
   a. Three pre-experiment essays were obtained from each student in the experimental and control groups during the first weeks of the project.
   b. Three post-experiment essays were obtained from all students at the end of the second semester.
   c. Three post-post-experiment essays were obtained from the remaining students at the end of the first semester in their second year of college.

Each of the nine essays mentioned above was written under supervised conditions on a specific date. On each date all students in the project participated and wrote upon the same topic. Essays of 300-350 words were requested. No names or dates were placed on the essays; only a code number provided identification.

No essays were scored until the post-experiment essays had been obtained. All scoring was done by two experienced and College-trained readers following specific criteria for scoring. The scorers had no knowledge of the times at which the six topics had been written upon.

3. Drop-out data. A record of drop-outs was kept for all experimental and control classes during the two semesters of classes.
4. Commentaries designed to reveal students' attitudes toward the courses were obtained from all experimental and control classes near the end of the second semester.

The following table indicates the independent and dependent variables which applied most significantly in the data gathered for evaluation:

Table III

INDEPENDENT AND DEPENDENT VARIABLES

Independent Variables:

1. Linguistic raw scores on ACE Scholastic Aptitude Test.

2. Scores on three essays written at beginning of first semester as derived from scorers' evaluation.

Dependent Variables:

1. Scores on three essays written at end of second semester as derived from scorers' evaluation.

2. Scores on three essays written at end of first semester in second year as derived from socrers' evaluation.

3. Commentaries revealing students' attitudes regarding the value of the course.

Criteria for Scoring Essays

As might be expected, the development of satisfactory objective criteria for scoring essays proved to be one of the most difficult and time-consuming tasks of the entire experiment. Through trial and error during the greater part of the academic year, experimentation was carried on with the assistance of various readers who work for the Department of English.

Workable criteria for scoring errors in MECHANICS were less difficult to devise than were criteria for ORGANIZATION and INTELLECTUAL CONTENT. Certain types of mechanical errors, which experience has shown us to be most common among remedial students, were merely totaled for each essay. The main problem here was to provide clear definitions of

the types of errors to be counted. A criteria sheet explaining four different categories of mechanical errors was therefore developed. To obtain a score for MECHANICS, the total number of errors in each essay was divided by the total number of words in that essay, to provide a percentage of errors. Percentage values were transformed to degrees (0-90), using the arc sine transformation as found in Fisher and Yates.[17] The degree values provided a set of variates for making comparisons among the elements of the experiment.

It was decided that accurate estimations of word counts for the essays could be made only if the words in at least ten lines were counted, and the average word per line determined therefrom. The articles a, an, and the were counted, as was the pronoun I if it occurred.

The creation of reliable methods for scoring ORGANIZATION and INTELLECTUAL CONTENT proved to be extremely difficult. However, it was eventually decided that the best method for scoring these categories consisted of nine-point scales involving nine questions which could be answered in the affirmative by check marks on a scoring sheet. Various problems arose here as we attempted to cover each of the areas fully and accurately with precisely nine questions, no more and no less. A greater problem arose in our attempt to create questions which did not overlap and which did not lend themselves to an appreciable amount of interpretation by the scorers.

At one point, in attempting to devise questions which would not be subject to individual interpretation by the scorers, we deemed it advisable to provide detailed explanations for each question, or to provide a breakdown of the factors involved in each question. However, this

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[17] Sir Ronald A. Fisher and Frank Yates, Statistical Tables for Biological, Agricultural and Medical Research, New York, Hafner Publishing Company, Inc., 1963, Table X, p. 74.

approach tended to confuse the scorers and made their decisions on individual questions even more difficult. Thus the questions were eventually made as simple as possible, with few of them accompanied by explanations. (Tables in Appendix A show the criteria for scoring MECHANICS, ORGANIZATION, and INTELLECTUAL CONTENT.)

To test the reliability of our scoring procedures, we conducted a study of scoring done by two different persons, using a random sample of 150 pre-experiment and post-experiment essays. Where MECHANICS was concerned, there was a negligible difference between the two scorings. However, as might be expected, the correlation was not nearly as close where ORGANIZATION and INTELLECTUAL CONTENT were concerned. An analysis of variance indicated that the reliability for the ORGANIZATION scores was .636 and the reliability for the INTELLECTUAL CONTENT scores was .497. (Appendix B presents the summaries of the analyses.) Our consultant from The Pennsylvania State University considers these indices to be minimally satisfactory, and he feels that the scoring criteria are entirely suitable for use by anyone possessing a reasonable amount of experience in grading student essays.

ANALYSES OF THE DATA AND FINDINGS

ACE and Essay Scores

At the completion of the second semester of the project, the scorers judged each student's pre-experiment and post-experiment essays according to three categories: MECHANICS, ORGANIZATION, and INTELLECTUAL CONTENT. At the end of the first semester of the second year, the scorers judged each student's post-post-experiment essays in the same manner.

The hypotheses proposed for the final analysis were as follows:

Table IV

PROPOSED HYPOTHESES

1. That there are no differences between the mean ratings of experimental and control subjects on judgments made in the three categories (mechanics, organization, and intellectual content), holding constant pre-experiment writing scores and ACE linguistic scores;

2. That there are no differences between the mean ratings of subjects taught by Instructor A_1 and Instructor A_2 on each of the three judgments (holding pre-experiment measures constant);

3. That there are no differences among the mean ratings of experimental and control groups which are not proportional to instructor differences (holding pre-experiment measures constant).

Because of drop-outs, analyses of relationships between the pre-experiment and the post-experiment essays were confined to the work of 108 students (as compared to the original 142 students beginning the project). Also because of drop-outs, essays from only 59 students were available for the post-post-experiment analyses.

As a check on the random assignment of the subjects at the beginning of the project, analyses of variance were calculated on the ACE linguistic scores and on the pre-experiment scores in MECHANICS, ORGANIZATION, and INTELLECTUAL CONTENT. An individual's score was the average score obtained from rating three essays. The analyses indicated no differences between students grouped in control and experimental sections, between students grouped under the two instructors, or among sections within instructors. (Appendix C presents summaries of these analyses.) Thus our findings were in close accord with Item 1 of the proposed hypotheses. In view of the lack of significant differences between the elements of

the experiment it seemed unnecessary to use the covariance technique in order to remove the effects of the independent variables of pre-experiment essay scores and ACE linguistic scores. Tables V, VI, and VII present the mean scores and standard deviations for each class section on ACE linguistic scores and on pre-experiment essay scores in MECHANICS, ORGANIZATION, and INTELLECTUAL CONTENT:

Table V

Mean scores (m), standard deviations (s), and number of subjects (n) for each class section on ACE LINGUISTIC raw scores and pre-experiment MECHANICS scores (the latter in degrees).

Instructors

Treatments	A_1 Sections				A_2 Sections				Treatment Totals	
	B_1		B_2		B_1		B_2			
	L	Pre.	L	Pre.	L	Pre.	L	Pre.	L	Pre.
C_1 (Control)	m = 52.00	11.63	m = 53.42	11.89	m = 56.78	9.66	m = 54.50	11.29	m = 54.16	11.10
	s = 10.77	2.88	s = 11.89	2.78	s = 9.28	2.41	s = 14.29	2.88	s = 11.29	2.81
	n = 15	15	n = 14	14	n = 15	15	n = 12	12	n = 56	56
C_2 (Exp.)	m = 50.85	10.83	m = 54.91	10.38	m = 59.14	11.07	m = 48.23	11.67	m = 53.32	11.00
	s = 9.65	4.42	s = 14.00	.78	s = 9.87	2.93	s = 8.38	3.55	s = 11.10	3.20
	n = 14	14	n = 12	12	n = 14	14	n = 13	13	n = 53	53
Instructor Totals	m = 52.70	11.22	m = 54.81	10.87						
	s = 11.35	3.03	s = 10.95	2.97						
	n = 55	55	n = 54	54						

Table VI

Mean scores (m), standard deviations (s), and number of subjects (n) for each class section on ACE LINGUISTIC raw scores and pre-experiment ORGANIZATION scores.

Instructors

Treatments	A_1 Sections B_1 L	A_1 Sections B_1 Pre.	A_1 Sections B_2 L	A_1 Sections B_2 Pre.	A_2 Sections B_1 L	A_2 Sections B_1 Pre.	A_2 Sections B_2 L	A_2 Sections B_2 Pre.	Treatment Totals L	Treatment Totals Pre.
C_1 (Control)	m = 52.00	5.99	m = 53.42	6.47	m = 56.78	5.75	m = 54.50	6.44	m = 54.16	6.14
	s = 10.77	.99	s = 11.89	1.58	s = 9.28	1.59	s = 14.29	1.31	s = 11.29	1.39
	n = 15	15	n = 14	14	n = 15	15	n = 12	12	n = 56	56
C_2 (Exp.)	m = 50.85	6.21	m = 54.91	6.52	m = 59.14	6.18	m = 48.23	5.63	m = 53.32	6.13
	s = 9.65	1.31	s = 14.00	.84	s = 9.87	1.00	s = 8.38	1.58	s = 11.10	1.12
	n = 14	14	n = 12	12	n = 14	14	n = 13	13	n = 53	53
Instructor Totals	m = 52.70	6.28	m = 54.81	5.99						
	s = 11.35	1.21	s = 10.95	1.39						
	n = 55	55	n = 54	54						

Table VII

Mean scores (m), standard deviations (s), and number of subjects (n), for each class section on ACE LINGUISTIC raw scores and pre-experiment INTELLECTUAL CONTENT scores.

	Instructors									
	A_1 Sections				A_2 Sections				Treatment Totals	
	B_1		B_2		B_1		B_2			
	L	Pre.	L	Pre.	L	Pre.	L	Pre.	L	Pre.
C_1 (Control)	m = 52.00	6.12	m = 53.42	6.04	m = 56.78	6.24	m = 54.50	6.57	m = 54.16	6.23
	s = 10.77	.78	s = 11.89	1.84	s = 9.28	.98	s = 14.29	1.19	s = 11.29	1.23
	n = 15	15	n = 14	14	n = 15	15	n = 12	12	n = 56	56
Treatments										
C_2 (Exp.)	m = 50.85	6.10	m = 54.91	6.74	m = 55.14	6.54	m = 48.23	5.20	m = 53.32	6.14
	s = 9.65	1.15	s = 14.00	.98	s = 9.87	1.35	s = 8.38	1.71	s = 11.10	1.42
	n = 14	14	n = 12	12	n = 14	14	n = 13	13	n = 53	53
Instructor Totals	m = 52.70	6.23	m = 54.81	6.14						
	s = 11.35	1.25	s = 10.95	1.40						
	n = 55	55	n = 54	54						

Further analyses revealed no significant differences between the results of our experimental course and our traditional course in remedial English, bearing out the validity of Item 3 of the proposed hypotheses. Analyses of variance for treatments, instructors, and class sections were run on the post-experiment and post-post-experiment scores in MECHANICS, ORGANIZATION, and INTELLECTUAL CONTENT; and these analyses revealed no differences between treatments. However, differences were noted between instructors on the post-experiment ORGANIZATION scores, disproving Item 2 of the proposed hypotheses. Differences were also noted among sections within instructors on the post-experiment ORGANIZATION scores. (Summaries of these analyses are presented in Appendices D and E.) Tables VIII, IX, and X present the mean scores and standard deviations for each class section on post-experiment and post-post-experiment scores in MECHANICS, ORGANIZATION, and INTELLECTUAL CONTENT.

Table VIII

Mean scores (m), standard deviations (s), and number of subjects (n) for each class section on post-experiment and post-post-experiment MECHANICS scores (in degrees).

	Instructors									
	A_1 Sections				A_2 Sections				Treatment Totals	
	B_1		B_2		B_1		B_2			
	Post	Post-post	Post	Post-post	Post	Post-post	Post	Post-post	Post	Post-post
C_1 (Control)	m = 10.48	10.71	m = 10.06	8.65	m = 10.14	7.61	m = 10.44	8.69	m = 10.28	8.83
	s = 2.55	3.00	s = 2.09	2.16	s = 1.84	2.43	s = 2.32	5.29	s = 2.16	3.30
	n = 15	8	n = 14	10	n = 14	10	n = 12	7	n = 55	35
Treatments										
C_2 (Exp.)	m = 9.90	7.66	m = 9.11	8.04	m = 10.06	9.46	m = 9.89	8.46	m = 9.76	8.39
	s = 4.61	2.02	s = 1.84	2.01	s = 2.79	3.47	s = 2.83	1.79	s = 3.15	2.36
	n = 16	7	n = 12	5	n = 14	6	n = 13	6	n = 53	24
Instructor Totals	m = 9.93	8.88	m = 10.13	8.40						
	s = 2.96	2.50	s = 2.41	3.39						
	n = 55	30	n = 53	29						

Table IX

Mean scores (m), standard deviations (s), and number of subjects (n) for each class section on post-experiment and post-post-experiment ORGANIZATION scores.

Instructors

	A_1 Sections				A_2 Sections				Treatment Totals	
	B_1		B_2		B_1		B_2			
	Post	Post-post	Post	Post-post	Post	Post-post	Post	Post-post	Post	Post-post
C_1 (Control)	m = 6.96	5.58	m = 7.42	6.56	m = 6.92	5.56	m = 6.74	6.13	m = 7.02	5.96
	s = 1.07	1.65	s = 0.62	1.52	s = 0.81	1.29	s = 0.83	1.51	s = 0.87	1.48
	n = 15	8	n = 14	10	n = 14	10	n = 12	7	n = 55	35
Treatments C_2 (Exp.)	m = 7.19	6.14	m = 8.19	6.53	m = 6.66	4.71	m = 6.63	6.10	m = 7.14	5.85
	s = 1.34	1.41	s = 0.57	1.93	s = 1.46	1.08	s = 1.08	1.14	s = 1.30	1.48
	n = 14	7	n = 12	5	n = 14	6	n = 13	6	n = 53	24
Instructor Totals	m = 7.40	6.24	m = 6.74	5.56						
	s = 1.04	1.57	s = 1.06	1.29						
	n = 55	30	n = 53	29						

Table X

Mean scores (m), standard deviations (s), and number of subjects (n) for each class section on post-experiment and post-post-experiment INTELLECTUAL CONTENT scores.

Instructors

Treatments	A_1 Sections				A_2 Sections				Treatment Totals	
	B_1		B_2		B_1		B_2			
	Post	Post-post	Post	Post-post	Post	Post-post	Post	Post-post	Post	Post-post
C_1 (Control)	m = 6.90	6.07	m = 6.80	6.49	m = 6.32	5.73	m = 6.96	6.09	m = 6.74	6.10
	s = 0.79	1.39	s = 1.06	1.10	s = 1.10	1.71	s = 0.95	1.78	s = 0.99	1.46
	n = 15	8	n = 14	10	n = 14	10	n = 12	7	n = 55	35
C_2 (Exp.)	m = 6.62	6.90	m = 7.77	6.86	m = 6.71	5.33	m = 6.99	6.21	m = 6.99	6.33
	s = 1.27	0.93	s = 0.62	1.21	s = 0.83	1.64	s = 0.72	1.16	s = 0.99	1.34
	n = 14	7	n = 12	5	n = 14	6	n = 13	6	n = 53	24
Instructor Totals	m = 6.99	6.57	m = 6.73	5.77						
	s = .94	1.15	s = 0.93	1.55						
	n = 55	30	n = 53	29						

Student Attitudes Toward Courses

Toward the end of the second semester of the project all students in both experimental and control groups were asked to write a paragraph or two explaining how the course might have been made more beneficial to them. This request was not unusual, as such has been done regularly in most courses at the College for the past several years. These statements are never signed, and the writing is proctored by someone other than the instructor of the course.

In general, the commentaries were not very favorable. Althought the instructors had attempted to explain to the students why they had been placed in a non-credit remedial course, a large number of the students indicated that they did not understand the reason for their being there. Many insisted that they should be given credit for the regular freshman English course. They complained of being a year behind in their English requirements, and they spoke of the cost of the course as being wasted. In both experimental and control groups there were complaints about the reading assignments. Although the instructors felt that opportunities for extensive reading had been provided, especially in the experimental group, many students stated that more reading should have been required.

The most adverse criticism clearly came from the students in the experimental classes. Here the instructors had concealed the fact that a formal experiment was in progress; they merely indicated that they were "doing things a little differently this year." The non-conventional approach in the experimental classes was obviously confusing to a number of the students: they stated that they should have had grammar drills and concentrated studies in punctuation and sentence structure.

In spite of the guest speakers' lectures upon styles of newspaper writing and in spite of studies of sentence structure found in news items, many students saw no value in using news media as primary study materials in a composition course.

It was also obvious that a large number of the students in the experimental group did not find the content of news media interesting, nor were they stimulated by class discussions (which the instructors thought they had based upon student interests). Many of the students in the experimental classes stated flatly that they considered the course to be a waste of time.

Drop-out Data

Thought the drop-out rate in this project was not as great as in some previous experiments at the College, it was somewhat higher than that for our regular freshman English courses.

Of the original 142 students beginning the project, in all eight classes, 23, or 16.2 percent, either dropped out during the first semester or failed to return for the spring semester. The drop-out rate in the four experimental classes was almost double that in the four control classes. In the experimental group 15 out of 74 students, or 20 percent, dropped out. In the control group 8 out of 68 students, or 12 percent, dropped out.

Of the original 142 students, 83 did not return to the College for a third semester, representing a drop-out rate of 58.5 percent. Approximately 60 percent of those who did not return were from the experimental group.

These figures might be compared with drop-out data from eight regular freshman English classes chosen at random from the class list

of the same year. Here 15.7 percent of the students either dropped out during the first semester or failed to return for the spring semester. Also, 41.4 percent of the original group did not return for a third semester.

As far as absences are concerned, there was little difference between experimental and control groups in this project. During the first semester of the project there were 1.83 absences per student among those students completing the semester. The absence rate rose during the spring semester, however, to 2.32 absences per student completing the semester.

During the same time, in eight freshman English classes chosen at random, there were 1.78 absences per student during the fall semester and 1.95 absences per student during the spring semester.

CONCLUSIONS AND IMPLICATIONS

It seems clear that our "interest-motivated" approach in the experimental group did not have the hoped-for results. Obviously, existing student interests were not capitalized upon in such a way as to inspire a more serious concern with English composition, the study materials employed were not particularly interesting to the students, and the indirect approach to English composition was no more effective than the traditional approach. In view of the fact that the students in the experimental group were confused by the non-conventional approach, it is evident that the instructors should have given them greater assurance of the validity of the teaching method without revealing that an experiment was in progress. The higher drop-out rate among the experimental classes probably also indicates that these students had not been convinced of the meaningfulness of the approach.

It is also clear that both control and experimental groups shared one important common denominator: resentment at being placed in a non-credit course lasting an entire academic year. This project, like others that we have conducted in the past, indicates that remedial courses should probably last no longer than one semester.

In regard to the differences between instructors where ORGANIZATION scores were concerned, it is highly likely that the more successful instructor tended to stress organization more frequently and in more different ways than did his colleague. The differences in ORGANIZATION scores between classes under the same instructor might be attributed to widely varying times of day for classes and to the repetition of identical class activities.

It appears that the most significant result of the entire project lies in the development of meaningful objective criteria for scoring students' essays. Though the correlation between ORGANIZATION and INTELLECTUAL CONTENT scorings done by two different persons was reasonably close, greater correlation might be achieved through further refinement of the nine questions for each category. Additional experimentation might lessen the possibilities of scorers interpreting the questions according to personal feelings, and further experimentation might lessen the existing tendency of one question to overlap another or of one answer to influence another.

BIBLIOGRAPHY

Blum, Martin, "Personal Reading and Writing," The English Journal, XLIV, January, 1955, 36-37.

Braddock, Richard, et al., "Suggested Methods of Research," Research in Written Composition, National Council of Teachers of English, 1963, 7-12.

Dowling, Kathleen B., "Science Visits an English Classroom," The English Journal, XXXVIII, March, 147-149.

Fisher, Sir Ronald A., and Frank Yates, Statistical Tables for Biological, Agricultural and Medical Research, New York, Hafner Publishing Company, Inc., 1963.

Gage, N. L., Handbook of Research on Teaching, Chicago, Rand McNally and Company, 1963.

Godshank, Fred I., et al., The Measurement of Writing Ability, New York, College Entrance Examination Board, 1966.

Grover, Kingman, "Freshman English as an Introduction to the Humanities," College English, XV, February, 1954, 284-287.

Kitzhaber, Albert R., "Freshman English: A Prognosis," College English, XXIII, March, 1962, 476-483.

Knieger, Bernard, "Group Dynamics Techniques and the Teaching of Composition," The Journal of Communication, XI, December, 1961, 220-223, 240.

Loomis, Emerson R. and John H. Adams, "Motivation in Freshman English," Improving College and University Teaching, X, Autumn, 1962, 183-186.

MaWhinney, Lucille, and Marvin Sitts, "Remedial Writing Remedies," Adult Leadership, X, November, 1961, 145, 154.

Nevi, Charles N., and Lloyd Hoffine, "We Can't Ignore the Mass Media," The English Journal, LI, November, 1952, 560-564.

Singleton, Carlton M., ed., Research Methods in the Language Arts, National Council of English Teachers, 1961.

Steinberg, Erwin R., ed., Needed Research in the Teaching of English, U. S. Department of Health, Education, and Welfare, 1963.

Wasson, Richard, ed., Proceedings of the Allerton Park Conference on Research in the Teaching of English, U. S. Department of Health, Education, and Welfare, 1962.

Zidonis, Frank J., "Generative Grammar: A Report on Research," The English Journal, LIV, May, 1965, 405-409.

Zimmerman, Joseph F., "What Motivates Students?" The Journal of Higher Education, XXVII, November, 1956, 449-453.

APPENDIX A

Table XI

Criteria for counting errors in MECHANICS

Count and record the total number of errors found in each of the four categories. Identical errors are to be counted as separate errors. No errors other than those mentioned below are to be considered.

I. SPELLING errors (including errors with to, too, two)

II GRAMMAR

A. [illegible] errors (tense, principal parts, lack of agreement with subject, etc.)

B. Glaring misuse [illegible] and adverbs

C. Pronoun errors
   1. lack of agreement between pronoun and antecedent
   2. awkward shift in pronoun
   3. indefinite pronoun

D. Diction errors (wrong choice of word, including their, there; then, than; etc.)

III. SENTENCE STRUCTURE

A. Fragments

B. Run-together sentences (two independent clauses with neither comma nor conjunction between)

C. Awkward sentences
   1. lack of parallelism
   2. poor word order
   3. confusing, illogical, or unintelligible statement

IV. PUNCTUATION

A. Misuse of commas
   1. comma fault (use of comma where semicolon or period is necessary)
   2. comma omitted after introductory dependent clause
   3. " " after introductory participial phrase
   4. " " between two independent clauses connected by conjunction (unless clauses are very brief)
   5. " " in association with non-restrictive elements
   6. " " from dates, addresses, locations involving names of states, etc.
   7. obvious overuse of comma

B. Misuse or omission of apostrophe (including misuse of it's)

C. " " " " semicolons, colons, or periods

D. " " " " quotation marks and italics (underlining)

E. " " " " capitals

Appendix A, continued

Table XII

Points for scoring ORGANIZATION

of short expository themes

1. Is the title reasonably specific and in close harmony with the subject-matter?

2. Do the first sentences clearly introduce the subject?

3. In the body of the paper are there two or more sub-divisions which adequately develop the subject?

4. Has student adhered to the subject through (1) title, (2) introduction, (3) body, and (4) conclusion?

5. Is theme of adequate length (1½ pp.)?

6. Is division into paragraphs acceptable?

7. Does the first sentence or two in each paragraph give clear evidence of paragraph content?

8. Are sentences devoid of both wordiness and choppiness?

9. Has student avoided an abrupt or misleading conclusion?

NOTES: Do not check any of the nine points for YES unless answer is at least 75% affirmative.

Compositions are to be regarded as the work of entering freshmen.

Appendix A, continued

Table XIII

Points for scoring INTELLECTUAL CONTENT
of short expository essays

1. In view of the assigned topic, does the title show any originality?

2. Does the essay constitute a well-integrated unit of thought?

3. Are main ideas supported by specific and/or convincing data (arguments, facts, illustrations)?

4. Does the student give the impression that he has a genuine interest in discussing his subject?

5. Does the student have a clear understanding of his subject?

6. Are terms, expressions, and ideas made clear and understandable?

7. Does the student have an acceptable command of the written language for an entering freshman (C work)?

8. Is the writing devoid of slang terms and a flippant style?

9. Are statements and/or ideas acceptably mature for an entering freshman?

NOTES: Do not check any of the nine points for YES unless answer is at least 75% affirmative.

Compositions are to be regarded as the work of entering freshmen.

Appendix A, continued

Table XIV

ESSAY SCORING FORM

Essay #_____

MECHANICS	Totals
I. Spelling	
II. Grammar	
A. Verb	
B. ADV, ADJ	
C. PRO	
D. Diction	
III. Sentence Structure	
A. FRAG	
B. R-T	
C. AWK	
IV. Punctuation	
A. Comma	
B. Apostrophe	
C. Semicolon, colon, period	
D. Quotes, italics	
E. Capitals	

ORGANIZATION

1. ____
2. ____
3. ____
4. ____
5. ____
6. ____
7. ____
8. ____
9. ____

Total ____

INTELLECTUAL CONTENT

1. ____
2. ____
3. ____
4. ____
6. ____
6. ____
7. ____
8. ____
9. ____

Total ____

Grand Total _____

Number of words in essay _____

APPENDIX B

Table XV

Analysis of Variance to Estimate Reliability for Scores on ORGANIZATION

Source	ss	df	ms
Between Essays	1348.89	146	9.24
Between Judges	93.15	1	93.15
Residual	491.35	146	3.36
Total	1933.39	293	

$$r = 1 - \frac{3.36}{9.24}$$
$$= 1 - .364$$
$$= .636$$

Table XVI

Analysis of Variance to Estimate Reliability for Scores on INTELLECTUAL CONTENT

Source	ss	df	ms
Between Essays	988.38	146	6.77
Between Judges	324.78	1	324.78
Residual	497.22	146	3.405
Total	1810.38	293	

$$r = 1 - \frac{3.405}{6.77}$$
$$= 1 - .503$$
$$= .497$$

APPENDIX C

Table XVII

Summary of Analysis of Variance on ACE Linguistic Scores

Source	ss	df	ms	F	
A (Instructors)	117.15	1	117.15	<1.0	
C (Treatments)	17.56	1	17.56	<1.0	
AxC (Interaction)	27.39	1	27.39	<1.0	
$B_{(AC)}$ (Between Sections)	957.66	4	239.42	1.94	$F_{.05} = 2.48$
Within Sections	12317.44	100	123.17		
(Pooled Within)	(13275.10)	(104)	(127.64)		
Total	13437.20	107			

Table XVIII

Summary of Analysis of Variance on Pre-experiment Scores on MECHANICS

Source	ss	df	ms	F	
A (Instructors)	3.59	1	3.59	<1.0	
C (Treatments)	0.21	1	0.21	<1.0	
AxC (Interaction)	31.49	1	31.49	3.49	$F_{.05} = 3.95$
$B_{(AC)}$ (Between Sections)	24.82	4	6.20	<1.0	
Within Sections	910.30	100	9.10		
(Pooled Within)	(935.12)	(104)	(9.00)		
Total	970.41	107			

Appendix C, continued

Table XIX

Summary of Analysis of Variance on Pre-experiment Scores on ORGANIZATION

Source	ss	df	ms	F
A (Instructors)	1.54	1	1.54	<1.0
C (Treatments)	0.12	1	0.12	<1.0
AxC (Interaction)	0.96	1	0.96	<1.0
$B_{(AC)}$ (Between Sections)	5.85	4	1.46	<1.0
Within Sections	166.73	100	1.67	
(Pooled Within)	(172.58)	(104)	(1.66)	
Total	175.20	107		

Table XX

Summary of Analysis of Variance on Pre-experiment Scores on INTELLECTUAL CONTENT

Source	ss	df	ms	F
A (Instructors)	0.18	1	.18	<1.0
C (Treatments)	0.26	1	.26	<1.0
AxC (Interaction)	4.69	1	4.69	2.77 $F_{.05}$ = 3.95
$B_{(AC)}$ (Between Sections)	15.45	4	3.86	2.28 $F_{.05}$ = 2.48
Within Sections	169.19	100	1.69	
(Pooled Within)	(184.64)	(104)	(1.77)	
Total	189.77	107		

APPENDIX D

Table XXI

Summary of Analysis of Variance on Post-experiment Scores on MECHANICS

Source	ss	df	ms	F
A (Instructors)	1.05	1	1.05	<1.0
C (Treatments)	7.28	1	7.28	<1.0
AxC (Interaction)	1.49	1	1.49	<1.0
$B_{(AC)}$ (Between Sections)	6.12	4	1.53	<1.0
Within Sections	763.94	100	7.64	
(Pooled Within)	(770.06)	(104)	(7.50)	
Total	779.88	107		

Table XXII

Summary of Analysis of Variance on Post-experiment Scores on ORGANIZATION

Source	ss	df	ms	F	P
A (Instructors)	11.88	1	11.88	10.8	<.01
C (Treatments)	0.39	1	0.39	<1.0	
AxC (Interaction)	3.12	1	3.12	2.82	$F_{.05} = 3.95$
$B_{(AC)}$ (Between Sections)	8.12	4	2.03	1.91	$F_{.05} = 2.48$
Within Sections	106.60	100	1.07		
(Pooled Within)	(114.70)	(104)	(1.10)		
Total	130.11	107			

Appendix D, continued

Table XXIII

Summary of Analysis of Variance on Post-experiment Scores on INTELLECTUAL CONTENT

Source	ss	df	ms	F
A (Instructors)	1.84	1	1.84	2.04 $F_{.05} = 3.95$
C (Treatments)	1.71	1	1.71	1.90 $F_{.05} = 3.95$
AxC (Interaction)	0.18	1	0.18	<1.0
$B_{(AC)}$ (Between Sections)	11.71	4	2.93	3.25 <.05
Within Sections	90.23	100	0.90	
Total	105.67	107		

APPENDIX E

Table XXIV

Summary of Analysis of Variance on Post-post-experiment Scores on MECHANICS

Source	ss	df	ms	F
A (Instructors)	3.30	1	3.30	<1.0
C (Treatments)	2.76	1	2.76	<1.0
AxC (Interaction)	25.74	1	25.74	3.01 $F_{.05} = 4.04$
$B_{(AC)}$ (Between Sections)	26.02	4	6.50	<1.0
Within Sections	444.17	51	8.71	
(Pooled Within)	(470.19)	(55)	(8.55)	
Total	501.99	58		

Table XXV

Summary of Analysis of Variance on Post-post-experiment Scores on ORGANIZATION

Source	ss	df	ms	F
A (Instructors)	6.73	1	6.73	3.17 $F_{.05} = 4.04$
C (Treatments)	0.17	1	0.17	<1.0
AxC (Interaction)	0.41	1	0.41	<1.0
$B_{(AC)}$ (Between Sections)	12.03	4	3.01	1.44 $F_{.05} = 2.58$
Within Sections	106.64	51	2.09	
(Pooled Within)	(118.67)	(55)	(2.16)	
Total	125.98	58		

Appendix E, continued

Table XXVI

Summary of Analysis of Variance on Post-post-experiment Scores on INTELLECTUAL CONTENT

Source	ss	df	ms	F	P
A (Instructors)	9.55	1	9.55	5.07	<.02
C (Treatments)	0.74	1	0.74	<1.0	
AxC (Interaction)	1.13	1	1.13	<1.0	
$B_{(AC)}$ (Between Sections)	3.68	4	0.92	<1.0	
Within Sections	100.06	51	1.98		
(Pooled Within)	(103.74)	(55)	(1.88)		
Total	115.16	58			