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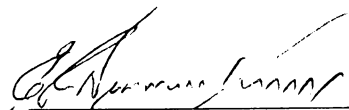
THE EFFECTIVENESS OF HETEROGENEOUS COOPERATIVE
LEARNING GROUPS IN THE TEACHING OF BUSINESS
COMMUNICATION AT THE POSTSECONDARY LEVEL

presented by

Rose Ann Sadler Swartz

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Educational Administration



Major professor

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THE EFFECTIVENESS OF HETEROGENEOUS COOPERATIVE
LEARNING GROUPS IN THE TEACHING OF BUSINESS
COMMUNICATION AT THE POSTSECONDARY LEVEL

By

Rose Ann Sadler Swartz

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Educational Administration

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ABSTRACT

THE EFFECTIVENESS OF HETEROGENEOUS COOPERATIVE
LEARNING GROUPS IN THE TEACHING OF BUSINESS
COMMUNICATION AT THE POSTSECONDARY LEVEL

By

Rose Ann Sadler Swartz

A quasi-experimental study was conducted to investigate the effectiveness of cooperative learning groups in the teaching of Business Communication II at the postsecondary level. The treatment group (n = 30, one section) participated in heterogeneous cooperative learning groups. Students were assigned to triads based on high school grade point average (GPA) categories of high, mid, and low. The control group (n = 89, three sections) was instructed in the traditional lecture-discussion method.

A nonequivalent control group design with pretesting and post-testing was used. The pretest ability measures included ACT scores, English 112 or equivalent, high school GPA, and pretest writing assignment. The posttest ability measure was a final writing assignment. The pretest and posttest attitude measures were the Writing Attitude Inventory and the Group Work Attitude Inventory. Pretest analysis indicated that the two groups were similar.

Quantitative and qualitative measures were used to address four research questions. The first research question concerned the

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differences in attitudes toward writing and group work between the control and treatment groups. MANOVA revealed significant differences ($p = .01$) in attitudes as measured by the posttest. Univariate F-test revealed that the significance was limited to two variables: Perception of the Writing Teacher ($p = .00$) and Involvement in Group ($p = .01$). A t-test analysis revealed that the treatment group had a higher mean score on both scales.

The second research question concerned the writing achievement gain between the control and treatment groups. A t-test revealed no difference ($p = .945$) in the posttest means for writing achievement.

The third research question concerned the relationship of pre-course ability and attitudes to achievement. Step-wise multiple regression revealed that three variables predicted 39.3% of writing achievement: Prewriting, ACT English, and Value of Group.

The fourth research question was answered by analyzing qualitative data gathered from students' evaluations of their groups. Students' comments revealed the development of cooperative skills.

The use of heterogeneous cooperative learning groups in the teaching of business communication was an effective alternative instructional strategy.

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The process of writing this dissertation has been truly a cooperative learning experience. Several colleagues and friends have cooperated by contributing their knowledge, experience, and support. A sincere thank you is extended to each of these individuals:

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To my sons, Mark and Matthew, for their understanding and prodding.

Above all, I want to acknowledge the support and guidance I received from my husband, Fred, who devoted endless hours to discussing statistics and methodology and who has given direction to my professional growth.

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Finally, I acknowledge the influence of my former professor, mentor, and friend, the late Dr. Lloyd V. Douglas, who introduced me to business education and inspired me to achieve.

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CHAPTER I

INTRODUCTION

A role of higher education is to produce well-educated, effective, and responsible workers. The gap between the skills needed and the skills possessed by the current workforce presents higher education with a challenge (Adult Literacy Task Force, 1988).

The Michigan Employability Skills Task Force was convened in 1987 and charged with the task of identifying the skills and behaviors needed by today's workers. The Task Force emphasized that Michigan's economic future must focus on people, teamwork, and technology. The skills of the men and women in offices and factories and their ability to work together in using the new technologies will determine how successful these workers are in keeping present jobs and securing future employment. The Task Force identified three skill categories as essential for current and future Michigan workers: (a) academic skills--including communication, (b) personal management skills, and (c) teamwork skills (Pestillo & Yokich, 1988).

This study explored the integrated effects of teamwork and cooperative learning on achievement in business communication and the development of attitudes toward writing and group participation.

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Statement of the Problem

Interpersonal skills are crucial for business workers and are a major component in making a business operate effectively (Brostrom, 1988). Stiegler (1984) stated that people lose their jobs not because of lack of specialized knowledge and skills, but because of an inability to interact effectively with co-workers and managers. Reece (1988) supported the need for human relations skills by stating: "A growing number of jobs today are interdependent; if the people in these jobs cannot work effectively as a team, productivity suffers" (p. 44). Naisbitt (1982) stated that as more technology is present in the workplace, more human interaction will be needed. "The more robots, the more quality circles. The more word processors and computer terminals, the greater the need to network laterally within an organization" (p. 200).

Research on cooperative learning experiences conducted by Johnson and Johnson (1983) led them to conclude that "the key to solving our quality of labor force crisis may be in substantially increasing the amount of time students learn cooperatively while they are in school" (p. 159). The structure hierarchies common in business 20 years ago have been replaced by increasingly democratic relationships; interpersonal skills play a more important role in business than ever. It is important that students learn how to work in cooperative environments (Bowman & Branchaw, 1988).

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Purpose of the Study

The purpose of this study was to evaluate the effectiveness of heterogeneous cooperative learning groups in teaching business communication at the postsecondary level. The study focused on the attitudes and achievement of students participating in cooperative learning groups. Quantitative and qualitative measurements were used.

Research Questions

Quantitative and qualitative measures were used to address four research questions. The research questions are restated as null hypotheses.

1. Do students who experience heterogeneous cooperative learning groups differ from those who experience traditional instruction in attitudes toward writing and group work as assessed by the Writing Attitude Inventory and the Group Work Attitude Inventory?

Ho 1: There is no difference between the attitudes toward writing and group work of students participating in heterogeneous cooperative learning group instruction and traditional instruction.

2. Do students who experience heterogeneous cooperative learning groups differ from those who experience traditional instruction in achievement in business writing skill as assessed by a post-measure of business letter writing?

Ho 2: There is no difference in business writing achievement of students participating in heterogeneous cooperative learning group instruction and traditional instruction.

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3. Is business writing skill, as measured by a posttest writing assignment, related to pre-course ability (ACT scores, English 112 or equivalent, high school grade point average, pretest writing assignment) and pre-course attitudes (toward writing and group work)?

Ho 3: There is no relationship between posttest writing achievement and pre-course ability and pre-course attitudes.

4. Do students who experience heterogeneous cooperative learning groups report, through written comments, favorable final evaluations? Qualitative analysis was used to address this research question.

Need for the Study

The business literature contains an abundance of research findings and authoritative statements relating the ability to communicate to career success (Leonard, 1988). However, research on the effects of cooperative learning groups in teaching business communication at the postsecondary level is limited. Johnson, Johnson, and Holubec (1988) stated:

Despite the overwhelming evidence of the power and importance of cooperative learning experiences, and the lack of clear evidence as to when competitive and individualistic goal structures can be beneficially used in the classroom, the current research findings are incomplete. (p. 22)

Although interpersonal or cooperative skills, such as the ability to work with others, have been identified as important, they usually have not been incorporated into course objectives. Slavin (1983) commented:

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Cooperation is one of the most important human activities. . . . People who can organize as a group to accomplish a common end are likely to be successful in business, in sports, in the military, or in virtually any endeavor. (p. 5)

Establishing cooperative learning groups as a means for acquiring cognitive and affective skills provides a real-life experience for students. Cohen (1972) stated:

In order to change the kinds of human abilities that students see as relevant to classroom success, curricular activities must be closer to the way adults use their minds in the world of work. There must be more stress on problem solving with different acceptable ways to solve problems and different media in which the problem is presented. (p. 148)

Successful cooperative learning groups provide students with real-life situations that encourage ideas to be expressed, decisions to be made, and tasks to be performed while working as a member of a team.

Mitchell (1988) indicated the importance of integrating written communication skills and interpersonal, listening, and speaking skills into the same business communication course and into single activities or projects. Teaching business communication by means of cooperative learning groups provides students with classroom experiences that assist in developing skills in cooperating, analyzing, evaluating, and writing.

Strategies for teaching business communication that incorporate developing cooperative skills as well as writing skills provide an alternative to the traditional lecture method so prevalent in higher education. The effectiveness of an alternate instructional strategy is worthy of investigation.

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Setting for the Study

Ferris State University, a four-year institution of approximately 11,000 students, emphasizes an occupationally oriented curriculum. The School of Business has approximately 4,500 students enrolled in accounting, computer information systems/office administration, management, and marketing.

The course into which heterogeneous cooperative learning groups were incorporated was Business Communication II (OA 210). The course is part of the core curriculum for the School of Business and is offered each academic term. Business Communication II is designed to develop effective writing skills for business and management. Development is gained through an understanding of communication theory, the role of communications in management, the critical and analytical reasoning for effective written expression, and the application of these principles to business situations (Ferris State University, 1988). Classes usually consist of 27 to 30 students representing the various majors offered in the School. Prerequisites include sophomore standing and completion of English 112 offered through the School of Arts and Science or completion of Business Communication I (OA 110) offered through the School of Business.

Definition of Terms

The following definitions of terms used in the study provide a common basis for understanding.

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Ability. The term "ability" is used to describe the students' academic ability as measured by American College Testing (ACT) scores, English 112 or equivalent, high school grade point average, and pretest writing assignment.

Achievement. The term "achievement" refers to students' knowledge of business writing as measured by a final written assignment.

Collaborative learning. The term "collaborative learning" refers to students working together (a) in peer groups or (b) in cooperative learning groups.

Control group. The term "control group" refers to a teacher-directed classroom where the lecture method is the primary method of instruction.

Cooperative learning group. The term "cooperative learning group" refers to students working interdependently to accomplish a mutual goal. Basic elements include positive interdependence, face-to-face interaction, individual accountability, interpersonal and small-group skills, and processing. In most situations students "share" grades from assigned projects.

Group work attitudes. The term "group work attitudes" is used to describe a set of attitudes toward group work as measured by the Group Work Attitude Inventory. Three scales comprise the instrument: Involvement in Group, Value of Group, and Anxiety Toward Group.

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Heterogeneous. The term "heterogeneous" refers to a group composed of students with varying abilities, attitudes, and characteristics.

Interpersonal skills. The term "interpersonal skills" refers to the ability to work with others, to listen to someone else's ideas, to participate in discussions, and so forth; also referred to as "cooperative skills" or "human relation skills."

Peer groups. The term "peer groups" refers to students working together who have equal standing with one another and are similar in rank or position. Peer groups usually provide a means for immediate feedback from group members but generally do not use the concept of "interdependence" or "shared" grades on assigned projects.

Treatment group. The term "treatment group" refers to the classroom that used heterogeneous cooperative learning groups as the primary method of instruction.

Unstructured observation. The term "unstructured observation" refers to instructor or student recordings of significant, specific events involving students cooperating with each other.

Writing attitudes. The term "writing attitudes" is used to describe a set of attitudes toward writing as measured by the Writing Attitude Inventory. The instrument comprises six scales: Perception of the Writing Teacher, Anxiety Toward Writing, Value of Writing in Society, Self-concept in Writing, Enjoyment of Writing, and Motivation in Writing.

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Limitations and Delimitations

This quasi-experimental study was conducted in an educational environment that imposed several restrictions. Restrictions were also imposed by the design of the research.

Limitations

Generalizability. The study was limited in generalizability to students enrolled in Business Communication II during winter term, 1988-1989, at Ferris State University. Generalization of the findings to other academic terms or to other academic settings was approached cautiously.

Instructor effects. The treatment group and one of three control groups were taught by the same instructor. Two other instructors were similar in rank and experience. Teacher attributes may have had some effect on the results.

Nonrandom groups. Because of the nature of class scheduling at Ferris State University, random assignment to course sections was not possible. However, class sections were representative.

Delimitations

Variable selection. This study focused on student attitudes and achievement after participating in heterogeneous cooperating learning groups. Attitude toward writing was delimited to the following six variables within the construct of the Writing Attitude Inventory: Perception of the Writing Teacher, Anxiety Toward Writing, Value of Writing in Society, Self-concept in Writing, Enjoyment of Writing, and Motivation in Writing. Attitude toward

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group work was delimited to the following three variables within the construct of the Group Work Attitude Inventory: Involvement in Group, Value of Group, and Anxiety Toward Group.

The investigation of achievement was delimited to pre- and posttest writing evaluations. Ability measures used as predictors of achievement were delimited to ACT scores, English 112 or equivalent grade, high school grade point average, and pretest writing assignment.

Sample size. The sample size was delimited to four sections of postsecondary students enrolled in Business Communication II at Ferris State University during winter term, 1988-1989.

Organization of the Study

Chapter I introduced the study by stating the purpose and need for the study, presenting the research questions to be investigated, describing the setting for the research, defining terms, and stating the limitations and delimitations of the research. Chapter II contains a review of relevant research on peer groups, heterogeneous groups, and cooperative learning groups at the secondary and post-secondary levels. Particular emphasis is given to research conducted in the use of cooperative learning groups in the area of writing. Chapter III describes the methodology used for conducting this study. Chapter IV contains a description of the findings. Chapter V contains a summary of the study, conclusions, and recommendations.

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CHAPTER II

REVIEW OF THE LITERATURE

Relevant literature for this study included the topics (a) collaborative learning, (b) peer learning groups, and (c) cooperative learning groups. The selected literature emphasized the application of group learning methods at the postsecondary and secondary levels. The more abundant literature on learning groups at the elementary school level was not included. Further emphasis was placed on identifying studies that used a pretest-posttest research design that included achievement and attitudinal variables.

The primary contributions were found in business journals, educational research journals, dissertations, and Dissertation Abstracts International. Both philosophical viewpoints and research findings were identified for inclusion.

Collaborative Learning

Collaborative learning is an instructional strategy whereby students work together in peer groups or in cooperative learning groups. Interest in collaborative learning gained momentum during the 1980s, although the term was coined and the basic ideas were first developed by British secondary school teachers in the 1950s (Bruffee, 1984).

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Viewpoints

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For American college teachers the roots of collaborative learning lie . . . in the nearly desperate response of harried colleges during the early 1970s to a pressing educational need. (p. 637)

Although colleges and universities offered tutoring and counseling programs, many students refused this special assistance. Some colleges implemented peer tutoring programs to alleviate this academic problem. Peer tutoring and similar modes such as peer evaluation and classroom group work provided a form of "indirect teaching" in which the teacher set the problem and organized students to work together to solve a task (Bruffee, 1984).

One way to implement collaborative learning groups in the classroom is by using peer groups. In writing classes, for example, peer groups enable students to work together to define, evaluate, and edit each other's writing. A second way for students to work collaboratively is by establishing cooperative learning groups. The unique feature of cooperative learning groups is that a positive interdependence needs to be developed whereby each member feels responsible for the learning activities of other group members (Johnson et al., 1988).

Peer Groups

Viewpoints

The advantages of peer response groups have been stated by several researchers. Bruffee (1984), a leading proponent of writing response groups, stated that peers working together foster a kind of "peer-based learning" that puts power in the hands of the students,

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Research

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a situation that is absent from most classrooms. The effectiveness of peer groups has also been identified by researchers.

The literature on peer editing indicates that feedback is principally responsible for gains in achievement and attitude. DiPardo and Freedman (1988) commented that the environment for peer response groups has special characteristics that address individual differences. They stated:

Ideally, peer talk about writing should occur in an environment that is flexible and attentive to the role of individual differences and that fosters communication about issues of genuine significance to students--a workplace organized and guided by a teacher, but offering the writer opportunities to solicit feedback from peers as well as from the teacher in support of one's evolving, individual needs. (p. 145)

Bruffee (1984) commented that conversation is important to the writing process and that writing is related to conversation in both time and function. He stated, "We converse; we internalize conversation as thought; and then by writing, we re-immersion conversation in its external, social medium" (p. 641).

Besides providing a particular kind of conversation, collaborative learning also provides a particular kind of social context for conversation, a particular kind of community--a community of status equals: peers. Students learn the "skill and partnership" of re-externalized conversation, writing, not only in a community that fosters the kind of conversation college teachers value most, but also in a community that approximates the one most students must eventually write for in everyday life, in business, government, and the professions. (p. 642)

Research

Renshaw (1986) completed a study on the effectiveness of the edit/revision method of instruction and the traditional method of instruction on the achievement and satisfaction of students in

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business communication at the college level. The findings showed that students in both treatment groups gained at least an equal amount concerning business writing principles, ability to apply the business principles, and student satisfaction. Students' attitudes toward the importance of business communication increased significantly with the edit/revision method of instruction.

Robinson's (1987) primary objective was to determine whether peer tutoring/editing was as effective a learning method as the traditional learning method. A second objective was to determine which group achieved more. Seventy average to above-average freshman composition students from a small private liberal arts college were the subjects for this study. Achievement was determined by numerical gain in scores made from pretest to posttest on a writing sample. This study showed that there was no significant difference in gain scores between the two groups; all students showed a gain. The third objective was to determine whether there was a significant difference in gain scores on seven individual items of the Diederich Scale. These items were ideas, organization, wording, flavor, usage, punctuation, and spelling. There was no significant difference between the edit/revision and traditional groups. However, for the individual item "wording," it was concluded that males gained more than females. A fourth objective was to determine the effects of the treatment curriculum on males and females in this study. The study indicated no difference between the two groups as a result of the treatment curriculum; however, there was a significant difference between male and female

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House (1982) studied the effect rewriting had on student achievement in a postsecondary business communication course. The study included 114 students divided into two experimental groups and one control group. Experimental Group I used individual letter rewriting exercises and the lecture-discussion method; Experimental Group II used small-group letter rewriting exercises and the lecture-discussion method; the control group used only the lecture-discussion method. Analysis of covariance, with significance set at the .05 level, was used to analyze the data. Adjusted mean posttest scores were examined using students' English grade point averages, overall GPA, and pretest scores as covariates. When students in the experimental groups were compared with students in the control group, there were significant differences in achievement that favored the two experimental groups. There was no significant difference in achievement between students in Experimental Group I and Experimental Group II. The results indicated that individual rewriting letter exercises and small-group rewriting letter exercises were more effective than the traditional lecture-discussion method in increasing student achievement.

One study (Swift, 1987) examined whether writing performance, retention, and attitude improved using the combined techniques of peer review with self-evaluation in teaching a freshman writing course in a community college. The subjects were 176 freshmen

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divided into four experimental and four control sections. The experimental groups used small groups of students working together to revise essays. The control groups were taught without the techniques of peer review or self-evaluation. Data included pretest and posttest essays, retention rate, Writing Attitude Scale, and an informal survey. It was concluded that the combined techniques of peer review with self-evaluation had a modest effect in producing better writing performance. The experimental techniques had a significant effect in improving freshman writing performance from pretest to posttest essay score.

Boss (1987) compared the effects of peer group critiques to direct teaching instruction upon students' writing skills and revision habits in a freshman composition course. A set of analytic composition scales coordinated with assignment sheets provided students with guidance for draft revisions and teachers with grading guidelines. The study focused on the manner of presentation of evaluative criteria: through collaborative learning (peer groups) and through traditional teacher-centered activities. Control group pretest/posttest mean scores showed slightly greater improvement, as measured by a two-tailed t-test with the .05 level of confidence. Although all students' writing improved, questionnaires and interviews at the end of the semester revealed students' preference for tutorials with individual conferences and teacher-corrected papers.

In another study (Roberts, 1986) a comparison was made on the effectiveness of peer-editing of business letters accompanied by brief grammar reviews and professor editing of students' business

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letters with no grammar reviews. To measure grammar ability of students, the Language Knowledge Test, Form A, was administered as a pretest and Form B as a posttest. A "neutral news" writing exercise was used to measure students' pre-business letter writing ability, and a "good news" writing exercise was administered as a posttest. In the experimental group, students were divided into groups of five. These students received a brief grammar review daily and collectively edited each other's business letters. In the control group, there were no grammar reviews and the professor graded all business letters for the students. The results of this experiment showed a significant difference in favor of the experimental group on posttest business letter scores.

Peer conferencing and one-to-one conferencing were investigated by Loken (1986) in college freshman writing classes. Attempts were made to match 50 control (teacher review) and 50 experimental (peer review) students by sex, age, career interests, English ACT scores, English GPA scores, composite ACT scores, and composite GPA scores. The effectiveness of the two strategies was determined by pre- and posttest essays, using Myer's recommendations for preparation and scoring, and also by the Daly-Miller apprehension pre- and posttest scoring. The findings indicated that the pre- and posttest writing and apprehension means were approximately the same for either group. Overall writing score increases were significant at $p < .05$. Overall apprehension decreases were significant at $p < .01$. Females on the average had higher writing scores ($p < .01$) than males, but

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males showed a significantly greater decrease in apprehension ($p < .01$) than females. In addition, the teacher review of the compositions required about 150 more hours of the instructor's time than peer review.

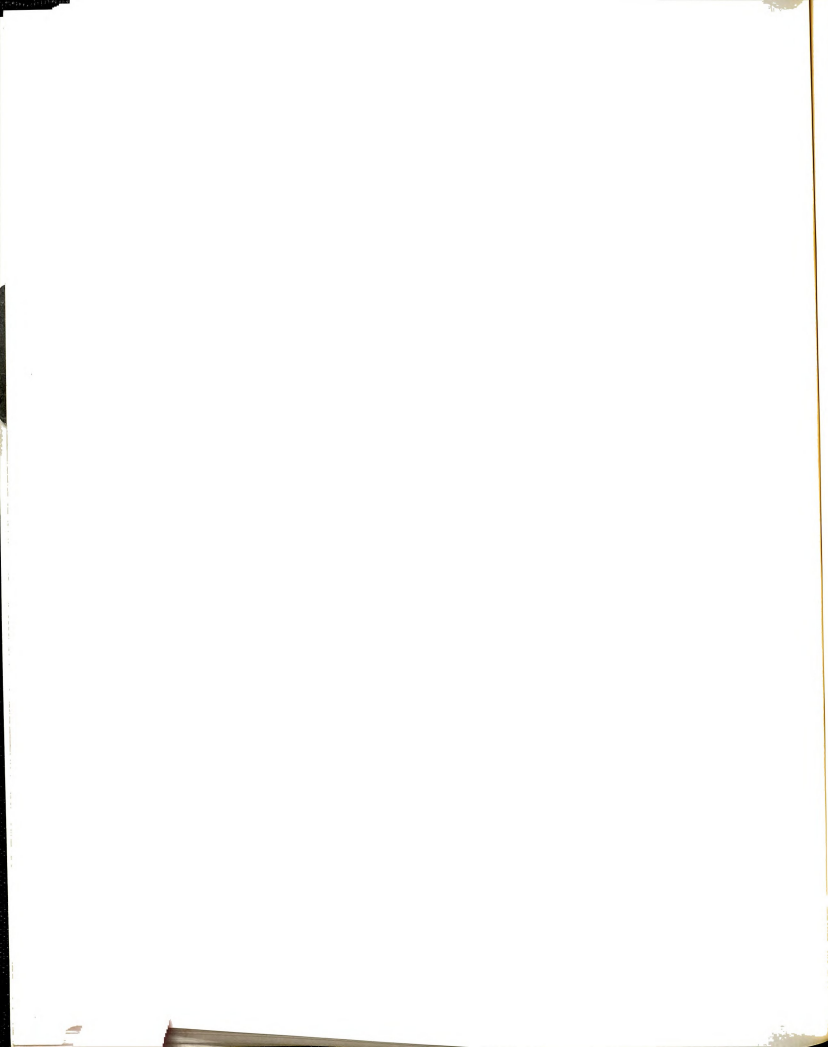
A study conducted by Graner (1986) in a postsecondary prep school examined the hypothesis that increased writing proficiency may be caused by the practice gained in critical evaluation. A control group used peer editing to revise initial drafts of essays, and an experimental group revised drafts in revision workshops. In the peer editing class, students met in small groups to critique each other's papers and to provide feedback to the writers. In the revision workshop, students independently read and evaluated sample essays using an editorial checklist. After each paper was rated, the teacher led a group discussion on the merits of the papers. Students in the revision workshop received no peer feedback. Both groups then rewrote their essays and submitted them for a final grade. Papers were scored by independent raters using the Diederich Scale. Repeated-measures analysis of variance (ANOVA), analyses of covariance, and the Pearson product-moment correlation were used in the analysis. Both groups significantly improved from initial to final draft, but no significant difference was found between groups. The revision workshop group made approximately 40% more changes than the peer editing group. The findings indicated that students who practiced critical evaluation skills on peers' work could apply those skills to their own work.

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The value of talk or conversation for a writer was addressed in the research conducted by David (1986). An ethnographic method of inquiry was used to describe the talk of inexperienced college writers in small-group writing workshops as they composed and revised their writing. Four categories of talk emerged from the study: talk in response to the papers, talk to establish the emotional climate, talk to move the group along, and talk addressed to the tape or listeners of the tape. The students' use of the groups represented the full range of a writer's concerns, from higher-level issues of intention and arrangement to lower-level concerns of usage and editing. David described the value for the writer in using talk in the small group to mediate between thinking and writing.

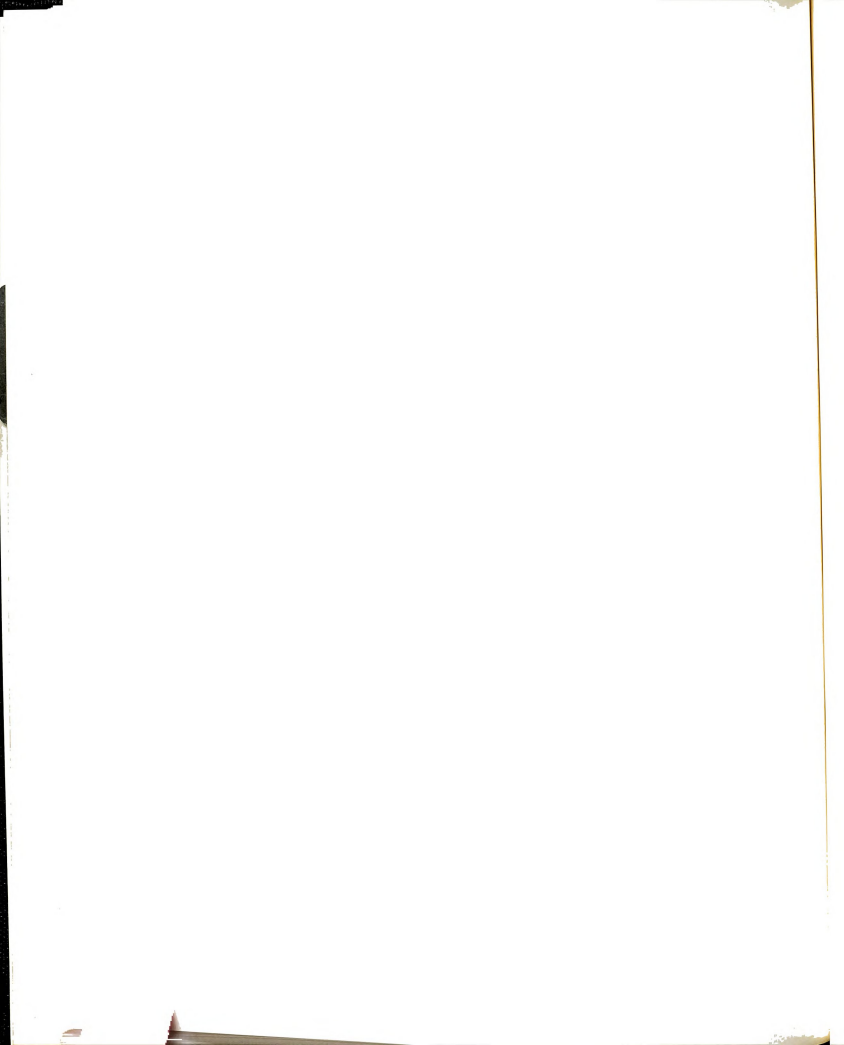
Benesch (1986) analyzed the discussions of one three-member peer group in a freshman writing workshop about their early drafts to discover what they talked about, how they talked about writing, and how they collaborated. A code system of content and function categories was developed to describe the talk both quantitatively and qualitatively. Interviews were conducted with the group and the individuals. Findings indicated that although the majority of peer group time was devoted to discussion of the drafts, there were certain obstacles to collaboration, including avoidance of elaboration and revision, feelings of competition between writers, and a sense that the writing and peer group discussions were more perfunctory than genuine. Findings also indicated that questions posed by the readers tended to encourage elaboration of the writer's ideas,



praise and suggestions for revision tended to limit the degree of collaboration, shared teacher-generated assignments tended to create competition, and the degree of collaboration was highest when the students were engaged in discussion of the responding process.

A study to describe changes in students' writing ability, attitudes toward writing, and degree of writer self-esteem was conducted by Strugala (1984). Two impromptu essays, a writer attitude questionnaire, and a self-esteem survey were administered during pre- and posttests to 52 remedial writing students and 30 freshman composition students at a four-year college. Trained readers scored the essays, which provided assessments of strong, average, and weak pieces of writing. The Writer Attitude Questionnaire identified writer behaviors and attitudes. The Thoughts About Myself and School Survey measured primary self-regard, self-esteem relating to school, attitudes toward instruction, and attitudes toward reading and writing. Significant gains in referential writing ($p < .03$) and nonsignificant gains in expressive writing were found for the remedial writing students. Nonsignificant gains in both referential and expressive writing were found for the freshman composition students. Stated implications of this study are:

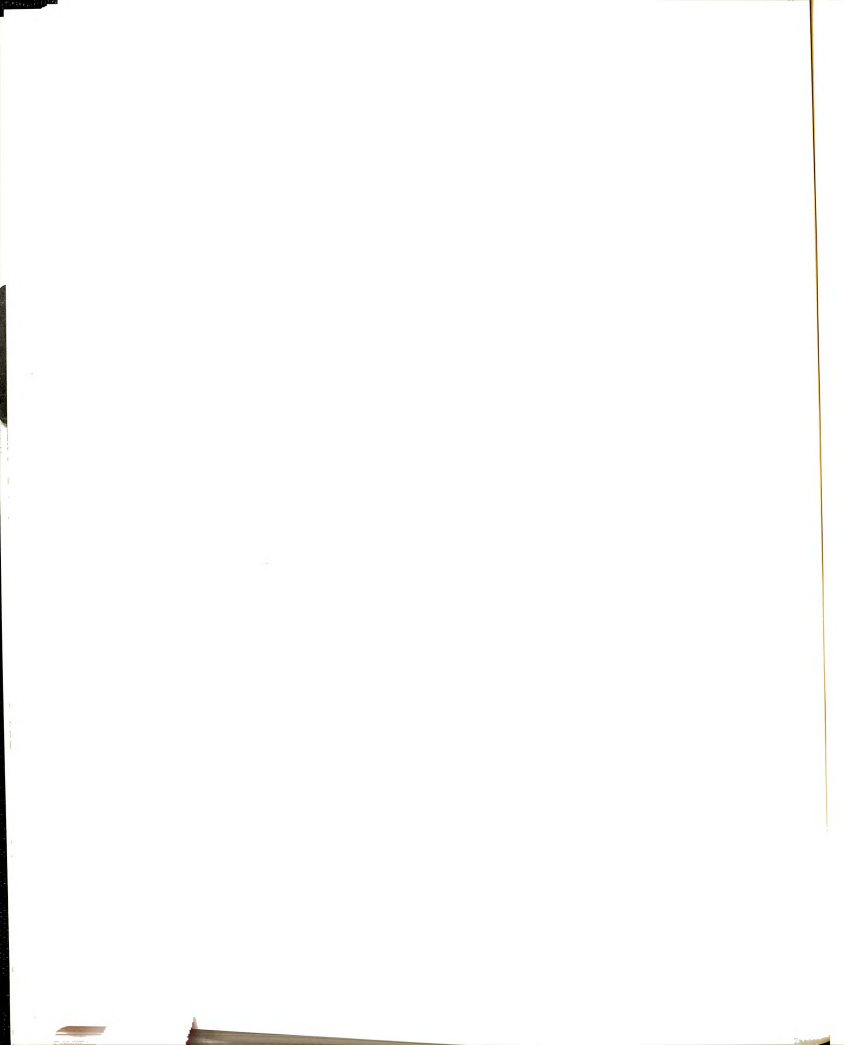
1. Assessment and evaluation of writing should consist of multiple aspects such as performance, attitudes, and behaviors.
2. Multiple options of response should be provided for students in writing situations which assess writing performance.
3. Multiple scoring methods should be used.



4. Instructors should recognize the apparent positive influence instruction has on writer attitude, behavior, and self-esteem and the connection to improvement in writing performance.
5. Instructors should integrate language experiences with developing the self-esteem of students.
6. Learning environments and writing assignments should be designed to facilitate the development of positive self-concepts in students.

A case study conducted in a two-year college in South Carolina (Shannon, 1983) sought to alleviate the problems in traditional approaches when used with nontraditional students. A small-group, personal-growth method was used that combined six components: nongraded daily writing, positive feedback on writing, freedom in paper length and topic, peer-evaluation techniques, instructor-student appointments, and activities to improve students' self-concept and self-awareness. The model was evaluated using the results of a pre- and post-standardized usage test and comparing the results with those of students in a different course. The project students also provided a self-report of improvement. The results indicated that frequent writing is essential to writing improvement, small groups are essential for theme evaluation and personal growth activities, and multiple modes of instruction are helpful.

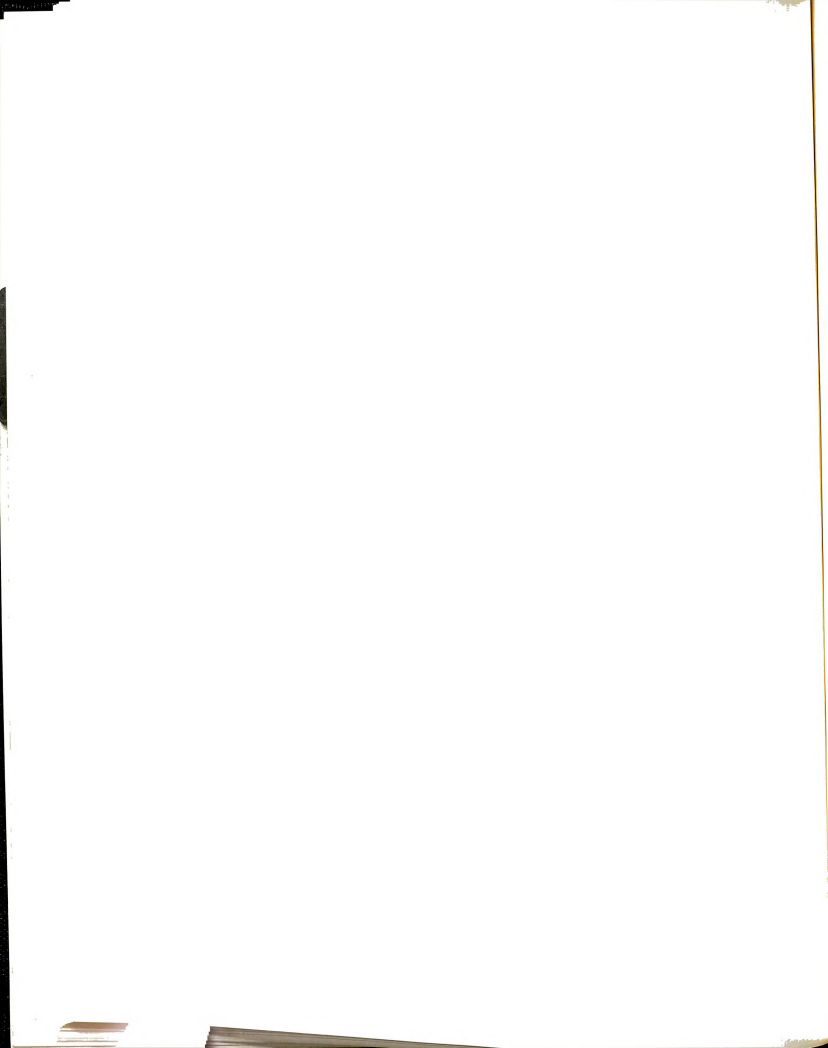
The use of learning groups in teaching introductory accounting was investigated by Wilson (1983). This study was designed to determine if there were significant differences in achievement, interpersonal relationships, and satisfaction between students who experienced group teaching as compared to the lecture method. The population comprised 91 students in the control (lecture) sections



and 94 students in the experimental (group) sections. Performance data consisted of scores on the Level I Financial Accounting-Form A exam. Data on interpersonal relationships and satisfaction were obtained from a questionnaire that was administered on the first and last class period and from a post-course survey. The results disclosed that the performance of students in the experimental sections was consistently higher than that of students in the control classes but that differences were not statistically significant. The results also indicated that students in experimental classes scored significantly higher on a number of interpersonal relationship satisfaction measures than did lecture students.

Baldwin (1986) described the development and implementation of a model for accommodation of preferences for alternative instructional environments. Students in a community college mathematics mini-course were informed of three learning environments: individual, small group, and large group. Environmental preferences were then assessed using take-home student questionnaires. Each student was assigned to his/her preferred learning environment. This investigation revealed several suggestive preference patterns:

1. Females and students with weak academic backgrounds tended to prefer the small-group environment.
2. Students with higher levels of communication apprehension tended to avoid the small-group environment.
3. New college students and students with negative mathematics attitudes tended to avoid the individual environment.
4. Students with higher grades in high school tended to prefer the large-group environment.

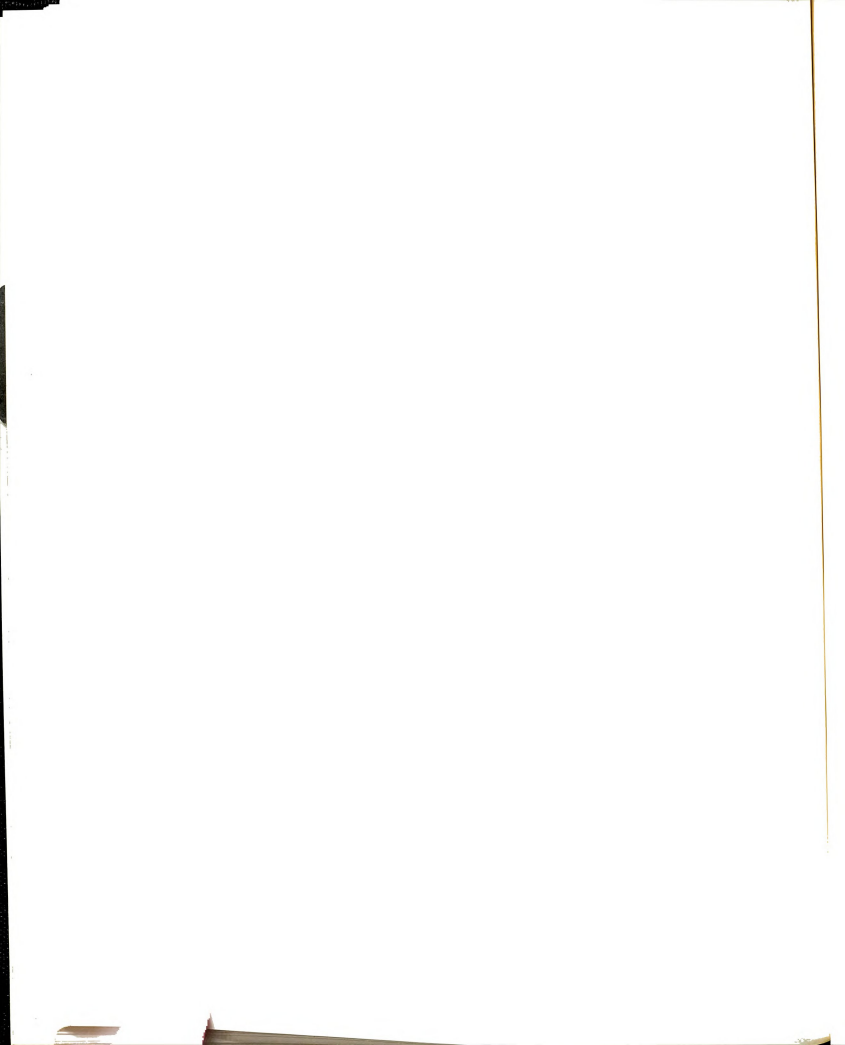


Emley (1987) designed a study to determine the efficacy of two different instructional types: team-assisted individualization (TAI) and individualized instruction in teaching remedial mathematics at the college level. Both modes of instruction were compared in light of the differing personality types of the students as measured by the Myers-Briggs Type Indicator and the students' attitudes toward math as measured by the Fennema-Sherman Attitude Scale. Results indicated that the effect of TAI on arithmetic achievement was marginal when personality types were simultaneously considered but was significant if personality was not factored into the analysis. TAI had no effect on algebra achievement. Course completion rates were significantly higher with TAI.

Jones (1982) explored an instructional technique designed to encourage students to teach each other. Data from 288 students in eight experimental "Peer Teaching in Permanent Project Teams" (PT) and eight matched control sections of an introductory zoology laboratory course were analyzed. Results indicated the PT resulted in increased cooperativeness and academic performance but were inconclusive with respect to the effect of PT on the quantity and quality of peer teaching and student satisfaction.

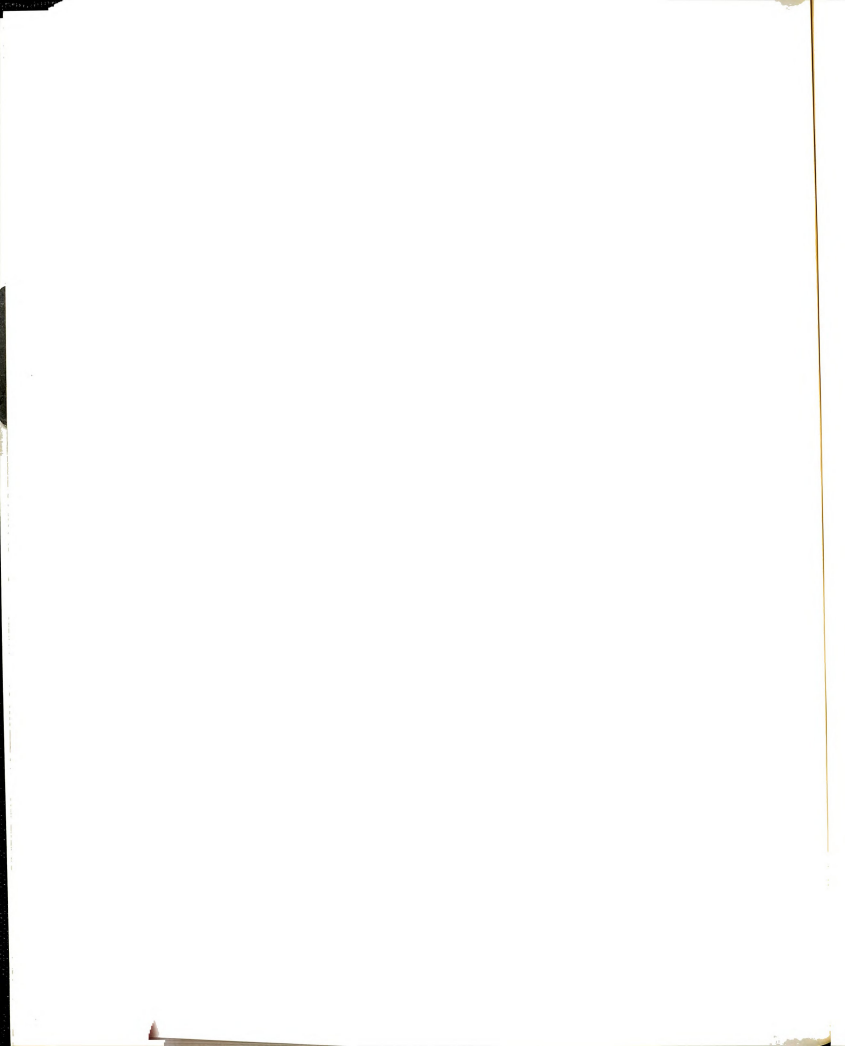
Continuing education or postsecondary education for non-traditional students is becoming more and more important on college and university campuses. Two studies investigated the use of learning groups in teaching adult education courses.

In a study of 106 adult learners' achievement on a criterion-referenced test, Saxe (1987) investigated the effects of variations



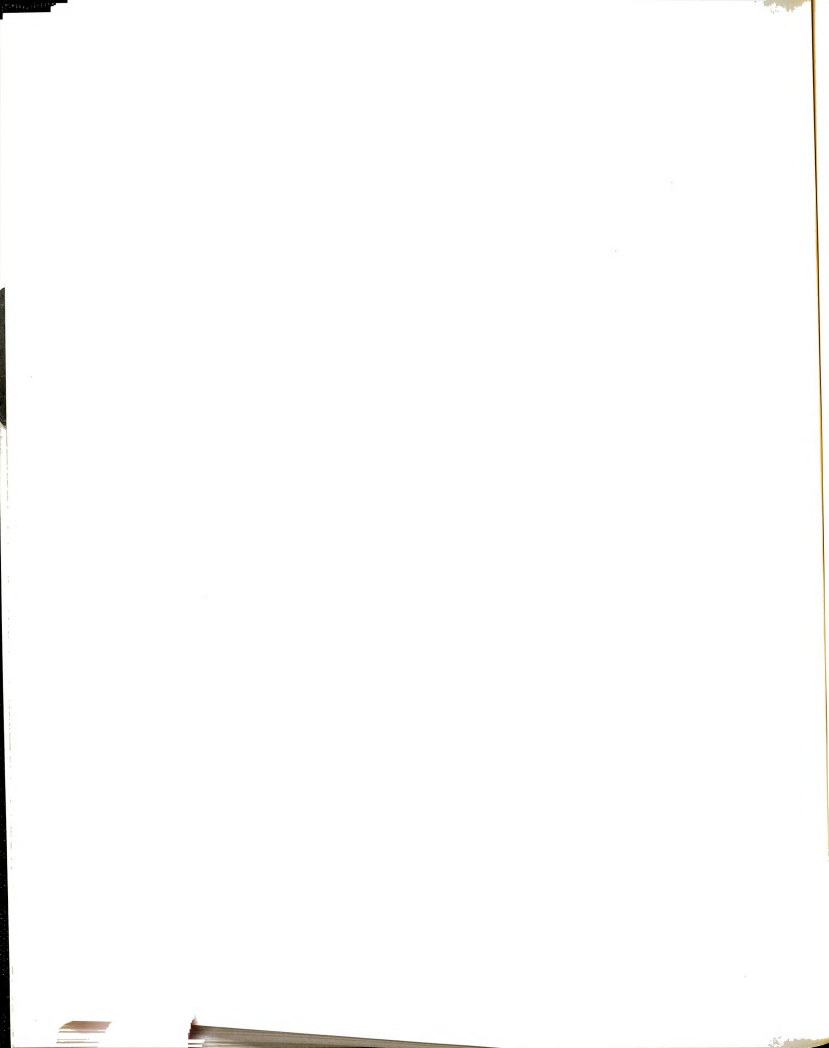
in levels of peer interaction (high, moderate, and low) and group versus individual incentive structure on adult learners' achievement. The treatment was a six-hour course in "How to Read a Bank's Annual Report" at a major California bank. Volunteer subjects were randomly assigned to one of three treatment groups: high, moderate, or low levels of peer interaction. Half the subjects in each treatment group received an incentive based on their group's performance and half on individual performance. The data were analyzed using ANOVA for main effects, peer interaction and incentive, and interaction effects. Results of the various tests supported moderate levels of peer interaction as the most powerful and educationally significant treatment in this study of adult learners. High and low levels of peer interaction and type of incentive structure did not significantly affect achievement. One of the conclusions given was that adult learners need some peer interaction to increase achievement.

Another study concerning adult college students' preferences for teaching styles was conducted by Daughenbaugh (1986). For the purpose of this study, two populations of postsecondary students were defined as traditional age (18 to 22 years of age) and adult learners (25 years of age and older). The measure used in this study was Learning Styles Inventory: A Measure of Student Preference for Instructional Techniques, which includes nine instructional strategies: projects, drill and recitation, peer teaching, discussion, teaching games, independent study, programmed instruction,



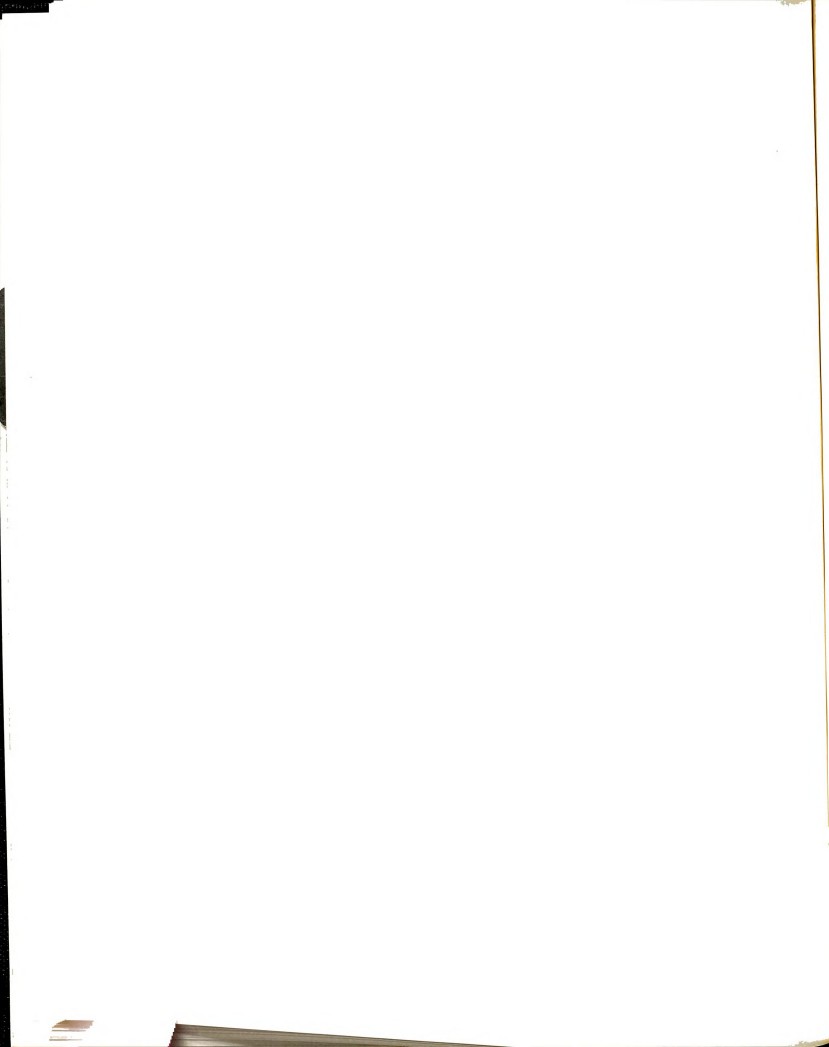
lecture, and simulation. The findings indicated that pre-adults favored peer teaching and teaching games; adults preferred independent study and discussion. Pre-adults disfavored drill and recitation, simulation, and independent study. Adults disfavored drill and recitation, simulation, and teaching games.

Four studies conducted in secondary schools were reviewed to assess the effectiveness of peer learning in various disciplines. The positive effects of peer interaction were illustrated in a study by Simpson-Courts (1986). The researcher attempted to document the process of acquiring metacognitive reading skills through the use of peer interaction discussion groups in a high school reading classroom. Six students were enrolled in a freshman developmental reading class. Students were taught a variety of topics relating to meta-comprehension and then given an assignment to be completed individually on the material presented. Students then discussed and synthesized their individual responses in a peer interaction group, producing one "product" that was to reflect consensus and/or the equal contribution of all group members. A variety of data were collected using an instrument to measure attitude toward reading, a standardized reading test, metacognitive interviews of student and expert readers, time-on-task audiotaped data, attitudes toward working in groups, use of metacognitive strategies from audiotaped sequences, and an analysis of peer interaction products. Positive effects of working in peer interaction groups were indicated in all data analyses with the exception of peer interaction products (i.e., student worksheets completed in groups).



Peer response groups in a tenth-grade writing class were investigated to examine the social interactions exhibited and the extent and nature of the revision activity (McManus, 1987). The subjects were 32 students in a class of average-to-high achievers and a representative case study group of six from the same class. Social interactions were studied through qualitative research methods. Data were collected from participant observation notes, audio and video tapes, student journals, a teacher's log, notes from peer group sessions, questionnaires and interviews, and student writing and revision samples. The peer response groups exhibited behaviors of trust, support, and helping; these behaviors carried over into the other activities of the classroom. The students in the study used the suggestions for revisions made by their peers in the group session 89.4% of the time.

A different finding resulted from Earls's (1983) research, which compared peer evaluation and teacher evaluation of first drafts of compositions written by high school sophomores. Eighty-one students participated in the study. Students in two classes evaluated each other's first drafts; a teacher evaluated the first drafts of students in the other classes. Instruction was similar in all classes. Pretest/posttest compositions on which students had received no evaluation were collected. During the seventh week of the study, compositions that had received first-draft evaluation were collected. Students also completed a STEP 2A Test of Writing Mechanics for a pretest/posttest. In this study, teacher evaluation



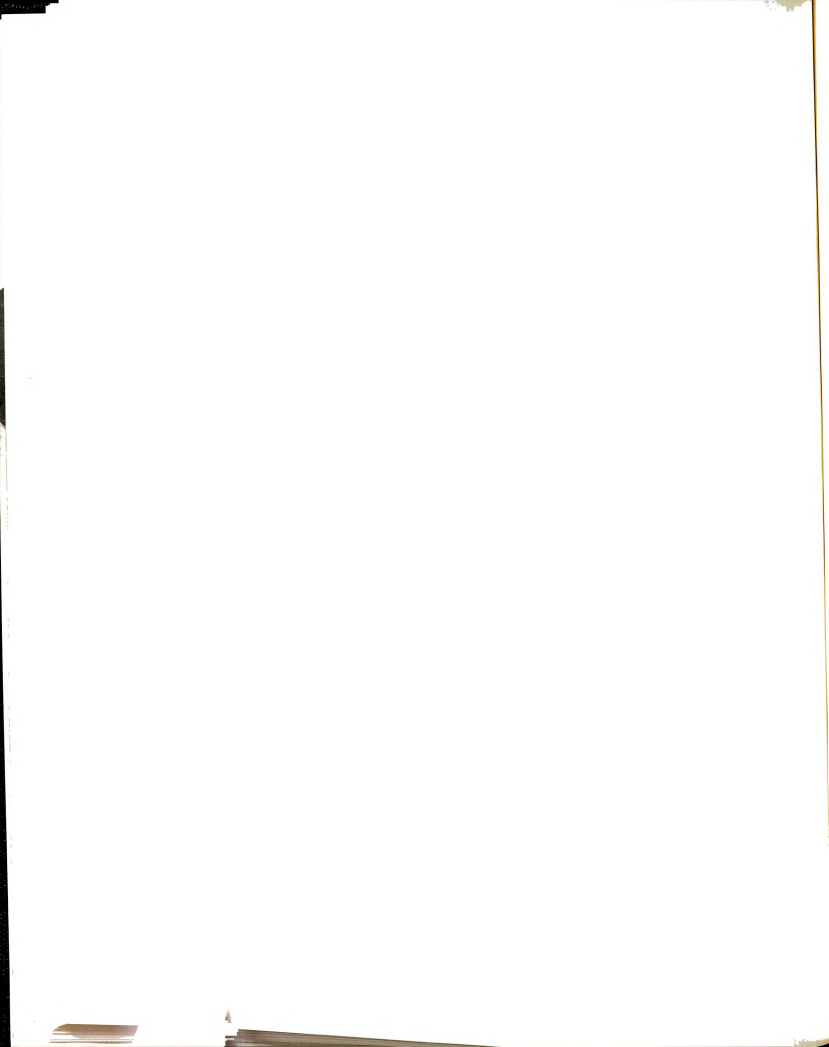
of first drafts proved to be a superior method for improving students' writing ability.

The effects of peer tutoring on mathematics achievement and attitude of ninth-grade students were researched by Novotni (1986). The methodology used for the study was the pretest-posttest experimental design. The t-test for unmatched groups was used to analyze the differences in achievement and attitude between tutored and non-tutored students. The Pearson product-moment correlation coefficient was used to determine whether a relationship existed between achievement and attitude of the students who were tutored. The statistical analysis revealed that there was a difference in the mean improvement of the peer-tutored students versus the non-peer-tutored students in mathematics achievement overall, but the mean improvement was insignificant. There was a positive mean improvement in both tutored groups; however, there was a significant difference in the mean improvement of the peer-tutored students versus the non-peer-tutored students in attitude toward mathematics overall. In addition, there was a nonsignificant positive correlation between mathematics achievement and attitude toward mathematics.

Cooperative Learning

Viewpoints

The unique feature of cooperative learning groups is the development of positive interdependence among members of the group. Cooperative learning is not a new idea. In the 1940s Morton



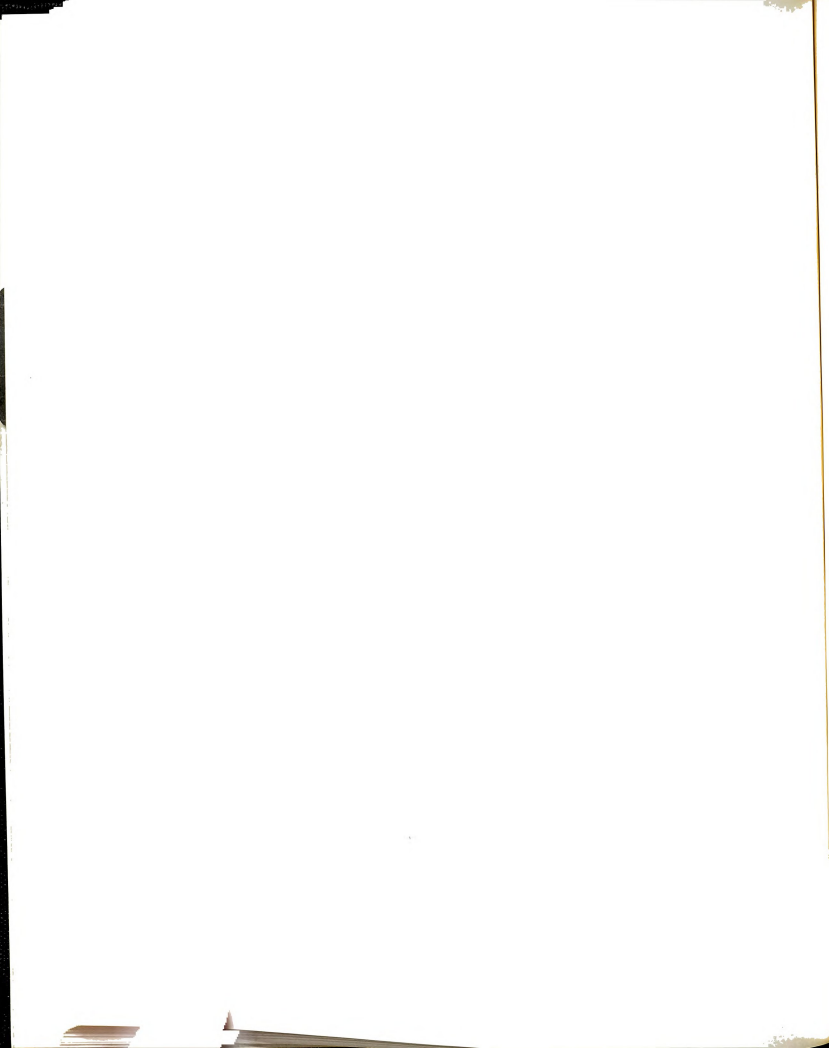
Deutsch, building upon the work of Kurt Lewin, proposed a theory of cooperative and competitive situations that has served as the foundation for research on cooperative learning (Johnson et al, 1988). The work of researchers such as Johnson and Johnson, has been built around the Deutsch model.

Cooperative learning groups are different from peer groups or other group-process techniques. Johnson et al. (1988) identified five elements that must be present if a cooperative learning group is to be successful:

1. positive interdependence
2. face-to-face interaction
3. individual accountability
4. interpersonal and small-group skills
5. processing

In cooperative learning groups, students work together to solve problems, make decisions, and complete tasks. Through this process, students develop cooperative and interpersonal skills. Numerous ways in which peer relationships contribute to social development, cognitive development, and socialization were cited by Johnson et al. (1988). Some of these ways include:

1. In their interactions with peers, children and adolescents directly learn attitudes, values, skills, and information unobtainable from adults.
2. Interaction with peers provides support, opportunities, and models for prosocial behavior.
3. Peers provide models of, expectations of, directions for, and reinforcements of learning to control impulses.



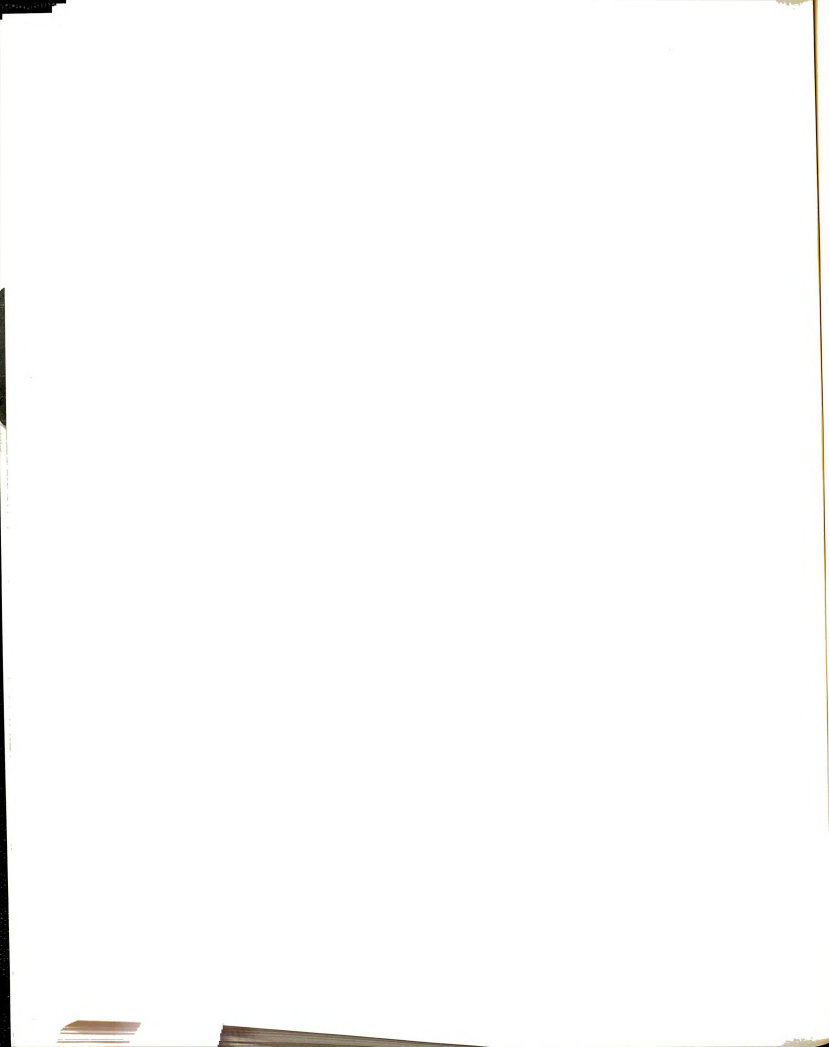
4. Children and adolescents learn to view situations and problems from perspectives other than their own through their interaction with peers.
5. Relationships with other children and adolescents are powerful influences on the development of the values and the social sensitivity required for autonomy.
6. Children need close and intimate relationships with peers with whom they can share their thoughts and feelings, aspirations and hopes, dreams and fantasies, and joys and pains.
7. It is through peer relationships that a frame of reference for perceiving oneself is developed.
8. Coalitions formed during childhood and adolescence provide help and assistance throughout adulthood.
9. The absence of any friendships during childhood and adolescence seems to increase the risk of mental disorder.
10. In both educational and work settings, peers have a strong influence on productivity.
11. Students' educational aspirations may be more influenced by peers than by any other social influence.

Cooperative learning groups afford the opportunity for students of all ages to develop interpersonal skills:

In order for peer relationships to be constructive influences, they must promote feelings of belonging, acceptance, support, and caring, rather than feelings of hostility and rejection. (Johnson et al., 1988, p. 3:8)

Teachers must control the group dynamics affecting student-student interaction (Johnson et al., 1988). Perceptions of being accepted by peers affect several aspects of classroom life:

1. Peer acceptance is positively correlated with willingness to engage in social interaction.
2. Peer acceptance is positively correlated with the extent to which students provide positive social rewards for peers.



3. Isolation in the classroom is associated with high anxiety, low self-esteem, poor interpersonal skills, emotional handicaps, and psychological pathology.
4. Rejection by peers is related to disruptive classroom behavior, hostile behavior and negative affect, and negative attitudes toward other students and school.
5. Acceptance by peers is related to use of abilities in achievement situations.

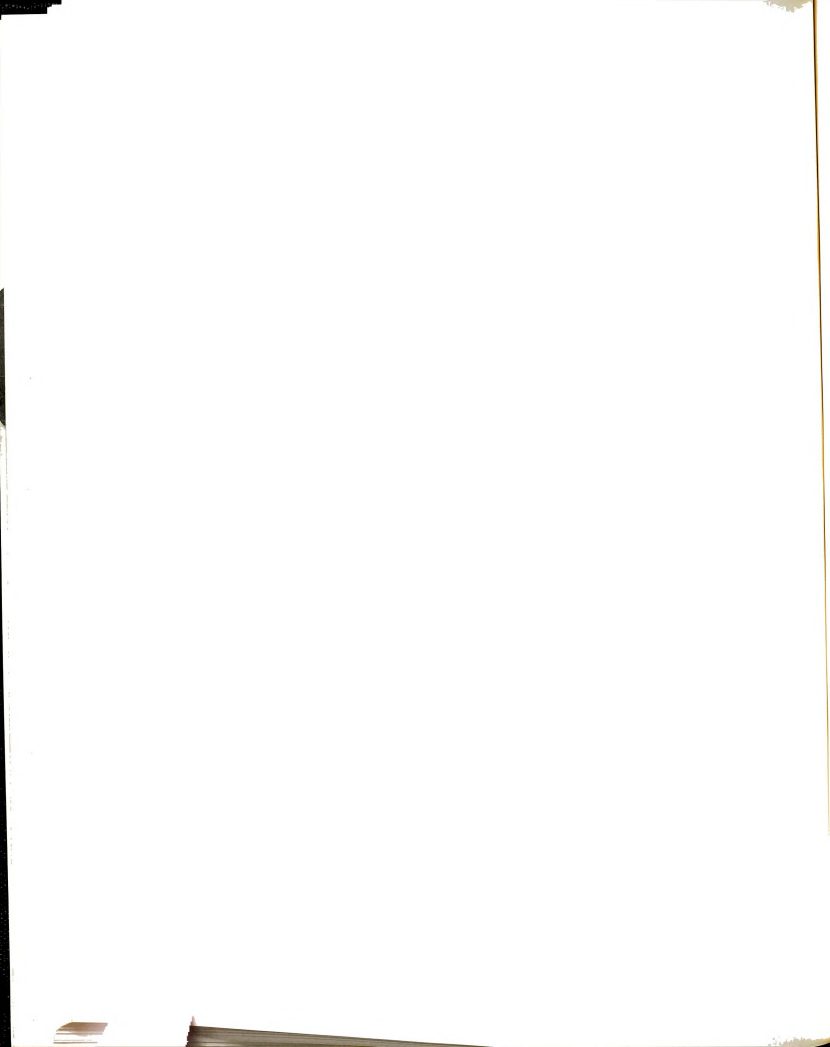
Research

Johnson et al. (1988) cited ten studies that have been conducted on cooperative learning primarily at the K-12 levels. They stated that:

Working together to maximize one's own learning and the learning of the other group members can have profound effects on students. A great deal of research has been conducted on the relationship among cooperative, competitive, and individualistic efforts and instructional outcomes. (p. 3:2)

Several meta-analyses of cooperative learning studies have been conducted. Johnson et al. (1988) presented their findings from a meta-analysis of 122 studies on cooperative learning conducted between 1924 and 1981. Results indicated that cooperative learning experiences tend to promote higher achievement than do competitive and individualistic learning experiences. Furthermore, "these results hold for all age levels, for all subject areas, and for tasks involving concept attainment, verbal problem solving, retention and memory, motor performance, and guessing-judging-predicting" (p. 3:13).

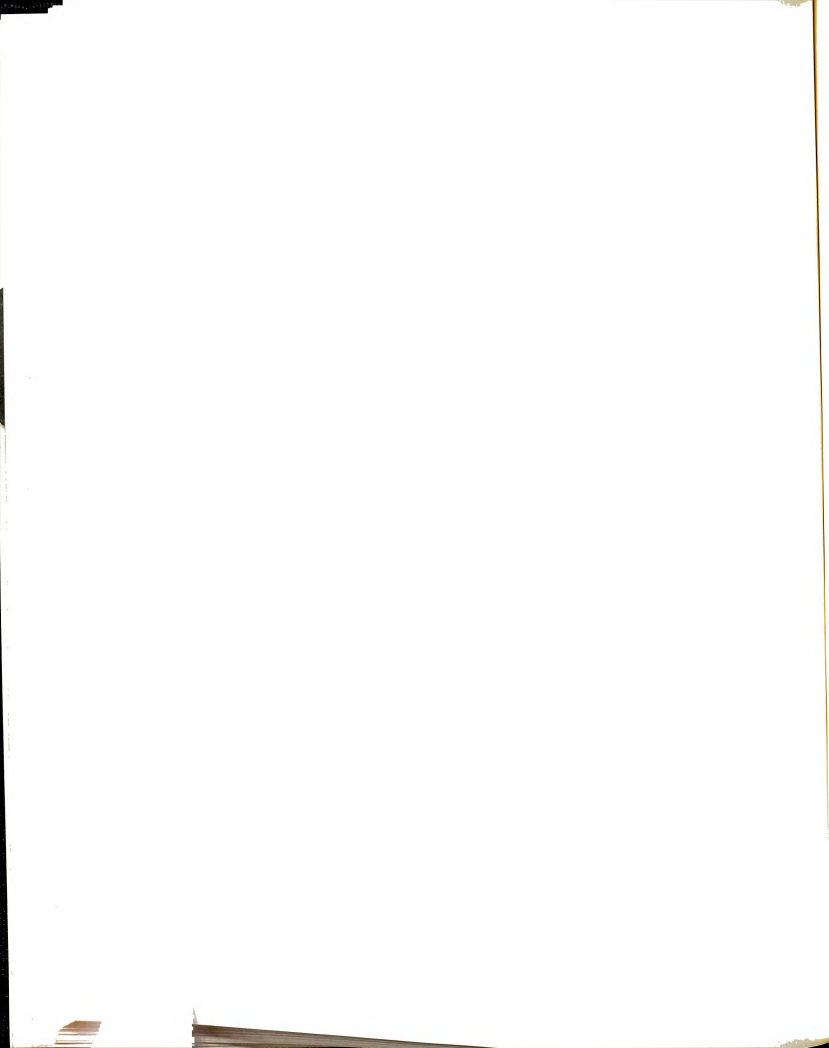
When comparing cooperative learning with competitive and individualistic learning, Johnson et al. (1988) cited several findings:



1. Cooperative learning experiences promote more positive attitudes toward both the subject area and the instructional experience, as well as more continuing motivation to learn more about the subject area being studied.
2. Students working together in cooperative learning groups master collaborative competencies at a higher level than students studying competitively or individualistically.
3. Cooperativeness is positively related to psychological health; i.e., emotional maturity, well-adjusted social relations, strong personal identity, and basic trust in and optimism about people.
4. Cooperative learning experiences tend to promote greater cognitive and affective perspective taking than do competitive or individualistic learning experiences.
5. Cooperative learning experiences tend to promote more differentiated, dynamic, and realistic views of other students and therefore fewer stereotypes than other learning experiences.
6. Cooperative learning experiences promote higher levels of self-esteem.
7. Cooperative learning experiences tend to promote expectations toward more rewarding and enjoyable future interaction among students.
8. Cooperative learning experiences also affect relationships with adults. For example, students like the teacher better and perceive the teacher as being more supportive and accepting academically and personally.

In their book, Cooperation in the Classroom, Johnson et al. (1988) listed learning outcomes promoted by cooperative learning as identified by five researchers:

1. Higher achievement and increased retention.
2. Greater use of higher-level reasoning strategies and increased critical-reasoning competencies.
3. Greater ability to view situations from others' perspectives.
4. Higher achievement and greater intrinsic motivation.

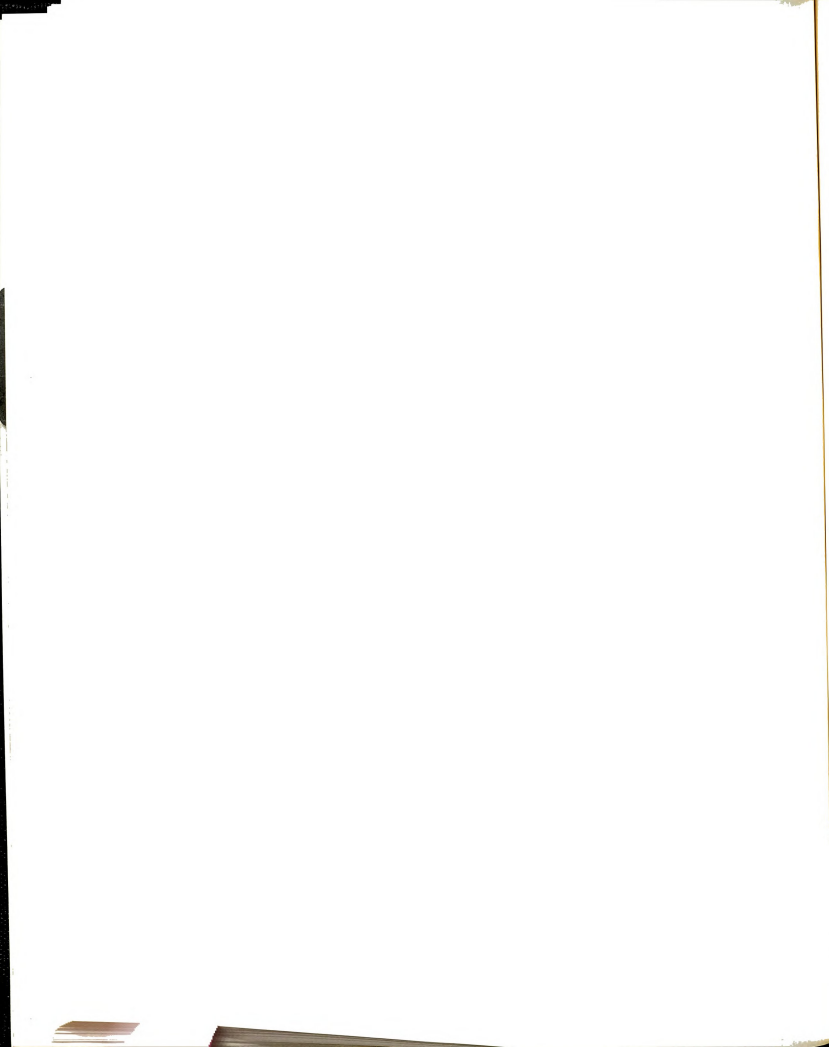


5. More positive, accepting, and supportive relationships with peers regardless of ethnic, sex, ability, or social class differences or handicapping conditions.
6. More positive attitudes toward subject areas, learning, and schools.
7. More positive attitudes toward teachers, principals, and other school personnel.
8. Higher self-esteem based on basic self-acceptance.
9. Greater social support.
10. More positive psychological adjustment and health.
11. Less disruptive and more on-task behavior.
12. Greater collaborative skills and attitudes necessary for working effectively with others.

At the University of California, Webb (1982) reviewed studies that focused on the role of the student's experience in small-group interaction in learning. Research bearing on three aspects of small group learning yielded these findings:

1. The research relating interaction in groups and achievement generally shows that giving help and receiving help are positively related to achievement, and off-task and passive behavior are negatively related to achievement.
2. The research suggests that motivation, anxiety, and satisfaction may be related to achievement in small groups; however, the link between interaction in the group and these socioemotional variables was not investigated.
3. The research suggests that students experiencing difficulty while learning might be especially likely to benefit from working with other students.

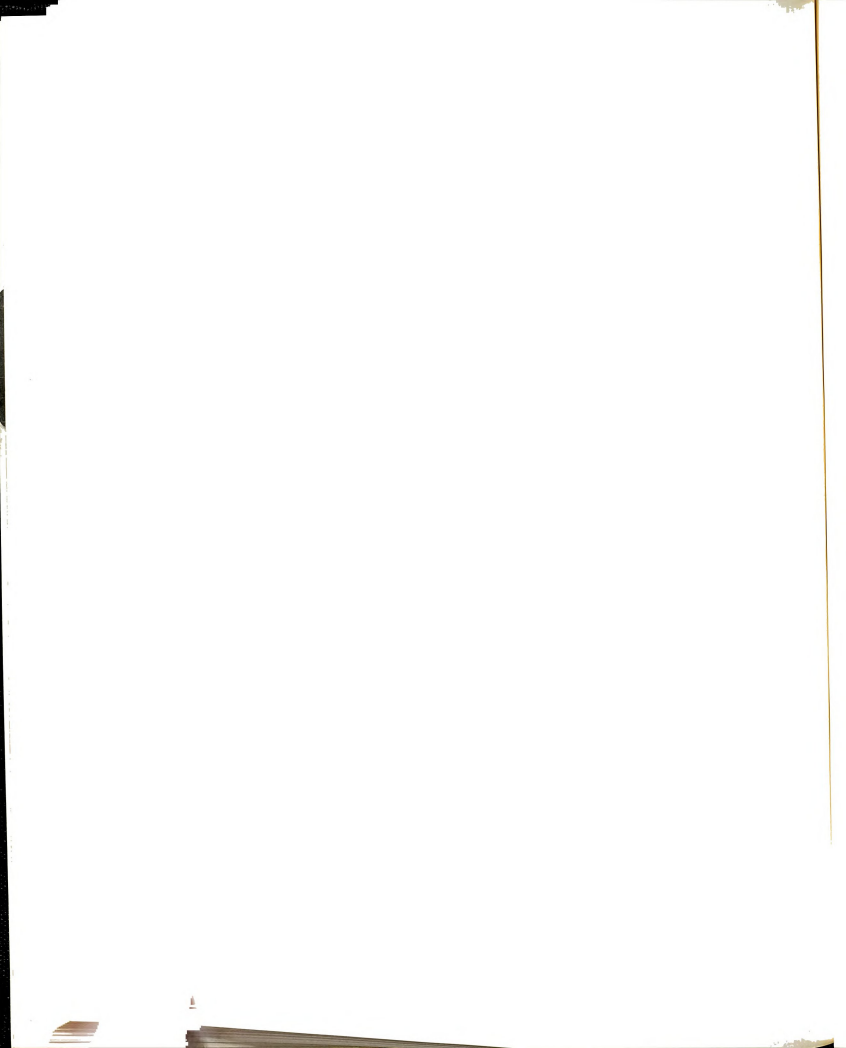
Although most research on cooperative learning groups has been aimed at elementary through secondary education, research has applicability to the instructional outcomes of higher education. A



limited number of research studies were found on the use of cooperative learning groups in teaching postsecondary subjects.

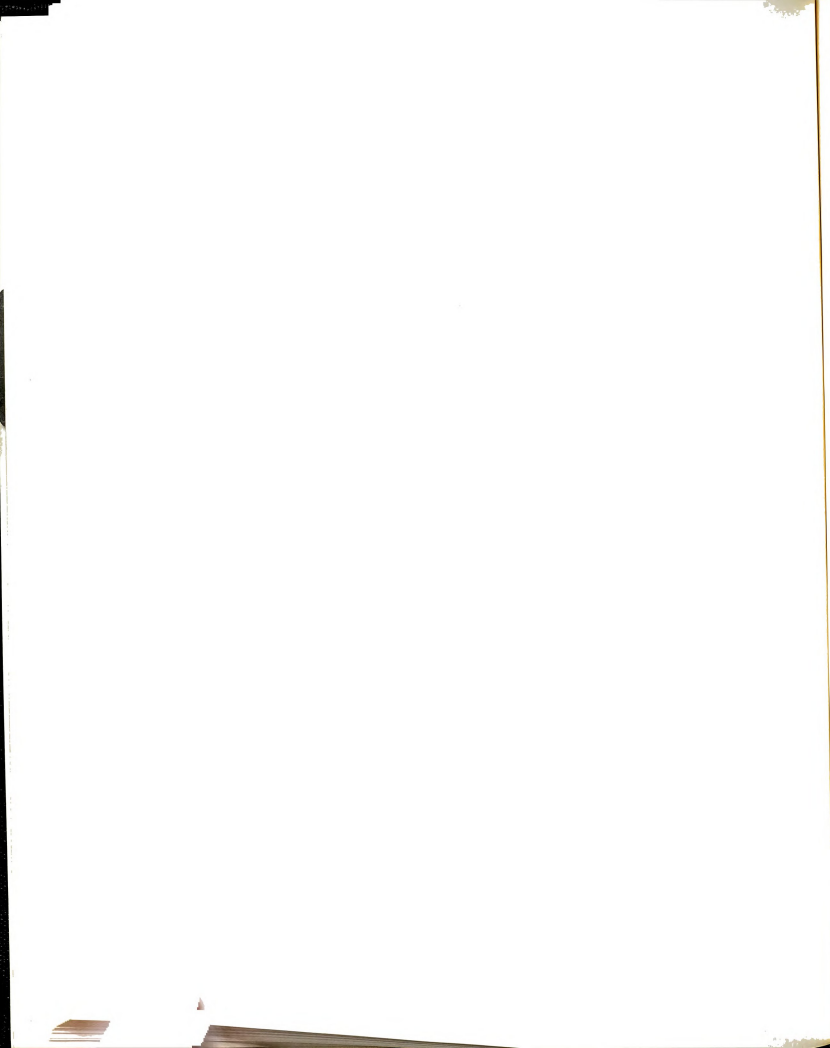
Adams (1986) investigated the effect of joint authorship on the writing of 44 college students at two colleges in Kentucky. In the treatment group, pairs of students worked together on three writing tasks; different student pairs were assigned for each assignment. The traditional method of instruction was used in the other group. Pre- and posttest measurements were used. Although positive trends were evident, no significant differences were observed in achievement on posttest scores between the groups. At the end of the course, participants completed a questionnaire asking for an evaluation of the joint authorship method of learning and the traditional method of instruction. Students indicated that they favored the joint authorship method as compared to the traditional method of instruction.

In a study entitled "The Effects of Cooperative Peer Review on College Students Enrolled in Required Advanced Technical Writing Courses" (Jordan, 1984), the relationship of peer review to writing performance, revision operations, and attitude toward rewriting was investigated. One hundred twenty-eight students taught by five experienced teachers in ten sections of a technical writing course were in randomly assigned groups. The experimental group participated in activities that stressed peer review of drafts and cooperative behaviors, and focused on revision throughout composing. Guidelines for cooperative groups and behaviors were discussed and incorporated into the reviews. The control group performed



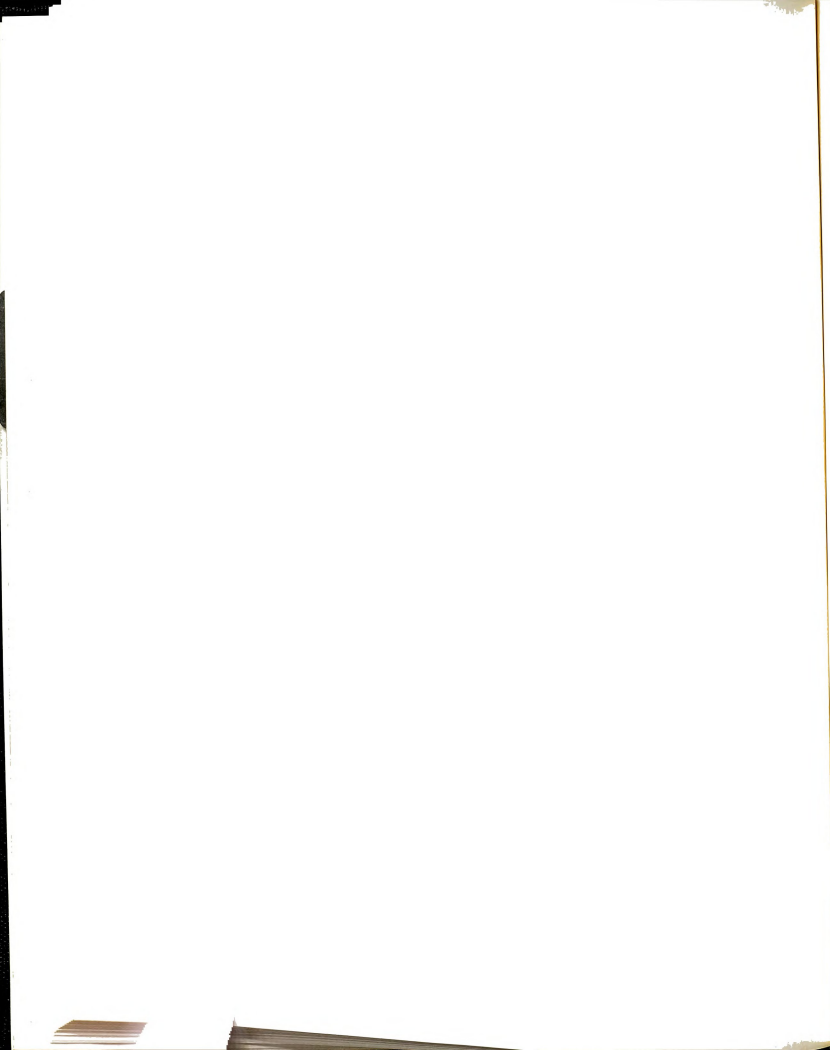
alternate activities. Pretest and posttest researched essays were collected and scored by outside raters. Further analyses of these essays included a frequency count of revision operations on drafts and revisions, and the scoring of the posttest attitude survey on rewriting. Statistical analyses included the analysis of covariance and the t-test. Although cooperative peer review did not show a significant improvement in writing skills, it did show an increase in the total number of revision operations performed, an increase in the operation of deletion, and an improvement in attitudes toward revision.

Carpenter (1987) researched the effects of competitive and cooperative learning on student achievement and attitudes in college fencing classes. Subjects were 80 college students randomly assigned to treatment groups structured either competitively or cooperatively. Students' achievement skills were measured for general fencing ability, foil accuracy, and reaction time. Attitudes toward the instructor, peers, competition, and cooperation were assessed. Analysis of the data showed no significant difference between performance scores for students in either treatment group. Analysis of the data for attitudes toward the instructor showed no significant difference between treatment groups. Results did show that students in the cooperative group were more positive in their attitudes toward cooperation, and students in the competitive group were more positive in their attitudes toward competition.



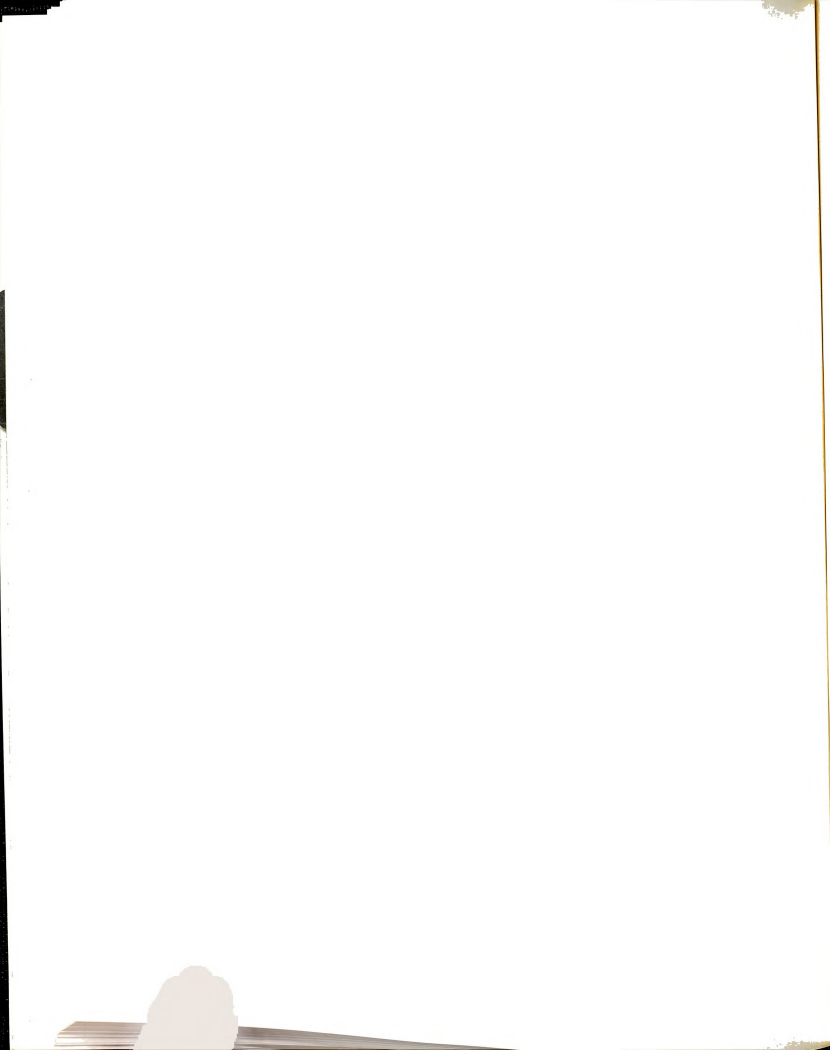
Fifty-six female college students enrolled in six different psychology/human development courses worked in cooperative groups in completing a classroom assignment (Mathewson, 1986). Group members indicated their attitudes toward the group as a whole and toward each member. Results indicated that individuals who perceived their groups as successful expressed more favorable attitudes toward their group as a whole. Results indicated that, in rating individual members, attitudes were more favorable toward individuals who were high contributors; low contributors were rated unfavorably.

Some research on the use of cooperative learning groups has indicated that the major benefits to students are improved attitudes and self-concept, not achievement. Chongapiratanakul (1986) examined how different instructional strategies facilitated student learning of specific educational objectives in a collegiate course on the operation of the human heart and the terminology used to describe it. The instructional strategies compared were independent instruction and two variations of quality circles. Students in the control group completed the instructional booklet independently. The instructional booklet was divided into four separate parts to be used in the quality circle formats. Students in the two experimental groups were divided into subgroups in which individuals studied the content independently and shared information through a cooperative quality circle technique called the Jigsaw Model. Experimental Group I was led by a facilitator trained in the processes of cooperative quality circle techniques. Experimental Group II was guided by a facilitator trained in both quality circle processes and



the content of the instructional material. Each subject was given a retention test immediately after the instruction. The same test was given to every subject four weeks later to obtain a measure of delayed retention. The results indicated that there was no significant difference among the treatment groups on both the immediate and delayed tests. In addition, the results indicated that no difference was attributed to the facilitator's training.

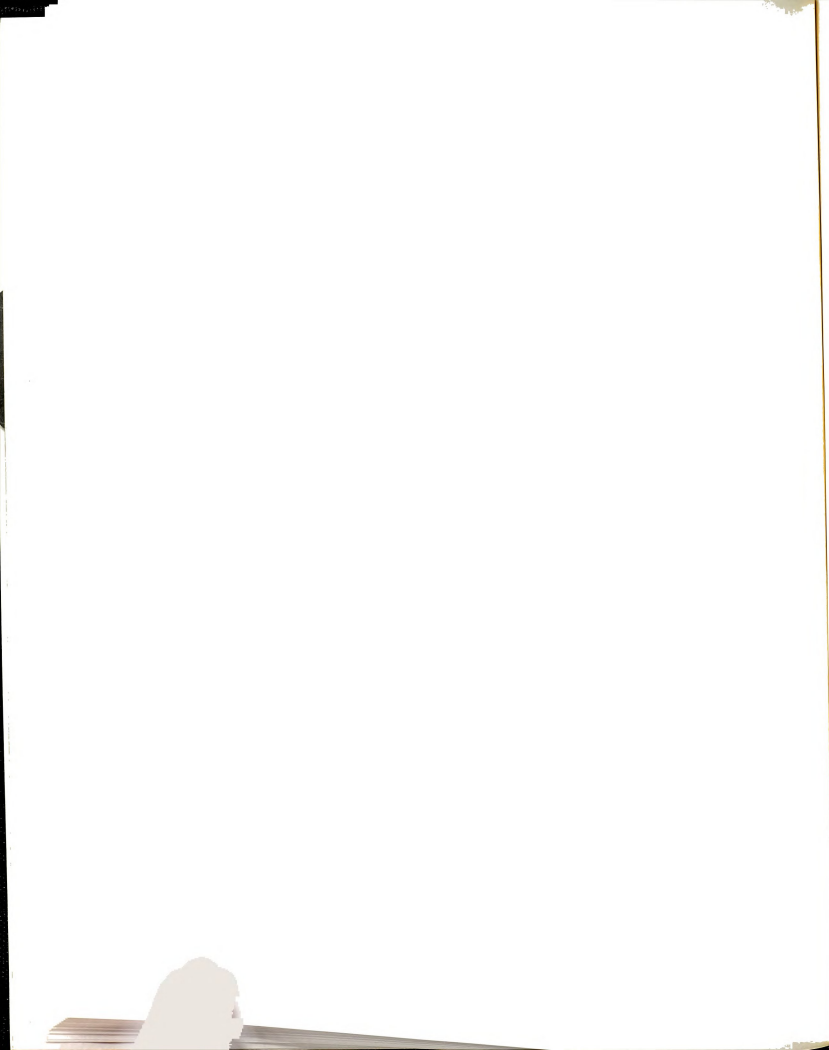
The purpose of research by Lauderbach (1986) was to determine the effects of cooperative and individual learning activities on a student's ability to visualize multiview orthographic projections as measured by an individual performance posttest. The subjects in this study were 69 full- and part-time undergraduate industrial art education majors and nonmajors enrolled in three sections of engineering graphics classes. Before the research, students were administered a visualization test to determine their spatial ability. On the basis of this score, students were identified as high or low visualizers and randomly assigned to a cooperative or an individual learning activity group. Following each multiview projection lecture, students completed daily problem sheets in their assigned learning groups. Students in the cooperative learning groups were encouraged to work together by using a reward structure. An individual multiview orthographic projection visualization posttest measured the visualization ability of students in both learning groups. The results indicated no significant difference in posttest scores of these students, nor was there a difference between high



and low visualizers in the cooperative and individual learning groups.

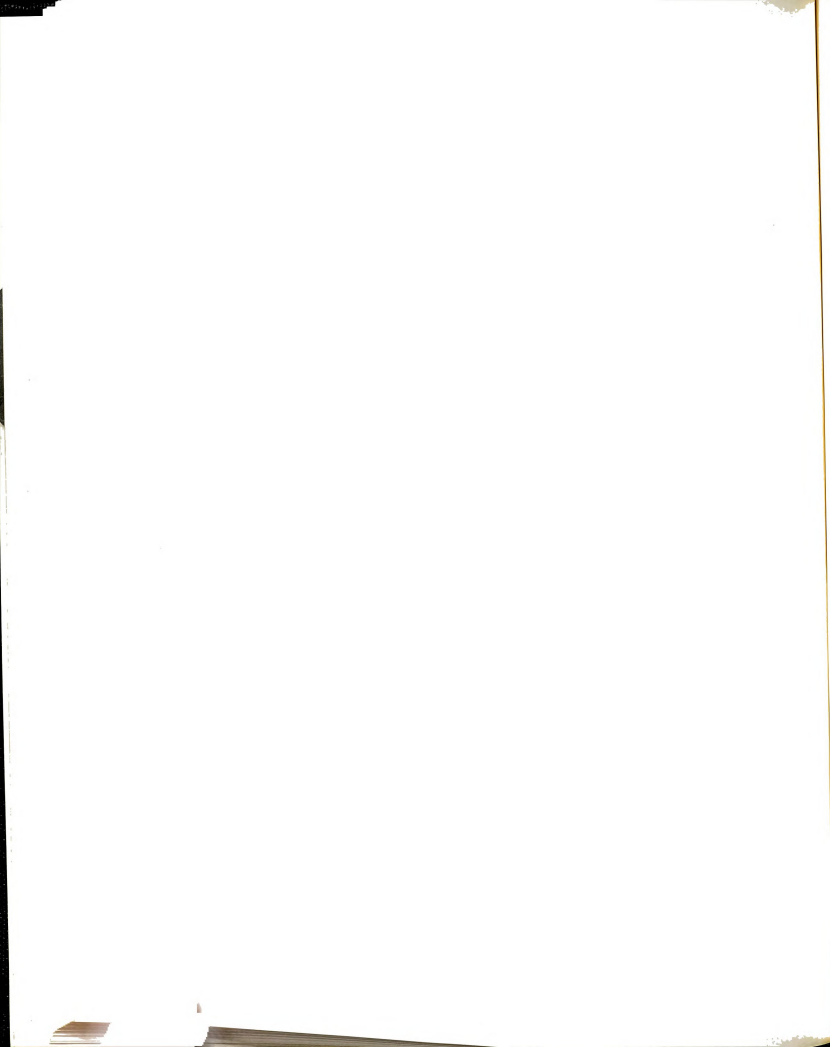
Cooperative learning groups have also been incorporated into postsecondary Spanish classes. Hartl (1985) conducted research with two experimental classes in which students worked together on assignments and with two control groups in which students worked individually on all tasks. All students were tested on measures of achievement and attitude. Measures that affect foreign language learning were used as covariates: previous experience in Spanish, foreign language aptitude, prior achievement in Spanish, initial attitude, and scholastic aptitude. Analyses of variance and covariance revealed significant differences in achievement on subsections of the first two course examinations in favor of the control group; however, on the final examination, the experimental group was favored significantly. The experimental group demonstrated a significantly more positive attitude than did the control group, due primarily to a significant effect of the interaction between method of classroom structure and teacher.

Smith (1985) investigated the effects of cooperative and individualistic goal structures on achievement, affective outcomes, and group process skills in 61 associate degree nursing students studying mental health nursing. The independent variable was the goal structure--cooperative or individualistic. The dependent variables were (a) achievement scores on quizzes and examinations; (b) attitudes toward modes of learning; (c) attitudes towards peers, teachers, resource interdependence, and academic self-esteem; (d)



attitudes toward working in groups and caring for mental health patients; and (e) amount of verbal interaction related to group task or maintenance as monitored by observers. Students were randomly assigned to four discussion groups. Two groups worked in cooperative small groups of three to four, another group worked in small groups of three to four but under an individualistic goal structure, and the fourth group worked individually under the direction of the teacher. The results revealed no significant difference between treatment groups in achievement, attitudes, or verbal interaction. Students who worked in small groups, whether cooperatively or individually, talked five times as often as students in the teacher-led individualistic group.

Lang (1983) compared the use of a cooperative learning technique, Teams-Games-Tournament (TGT), and the conventional lecture-discussion technique on the academic achievement and attitudes toward economics among college students. In addition, this researcher sought to determine the distributional or interaction effects of TGT on achievement and attitude among students in different ability levels. Lang used the posttest-only control group design. Sixty students were randomly assigned to the control (lecture-discussion) group or to the experimental (TGT) group. Achievement was measured using a 50-item modified version of the Test of Understanding College Economics. Attitude was measured by a Survey of Attitude Toward Economics. Findings indicated that TGT had no statistically significant effect on academic achievement of

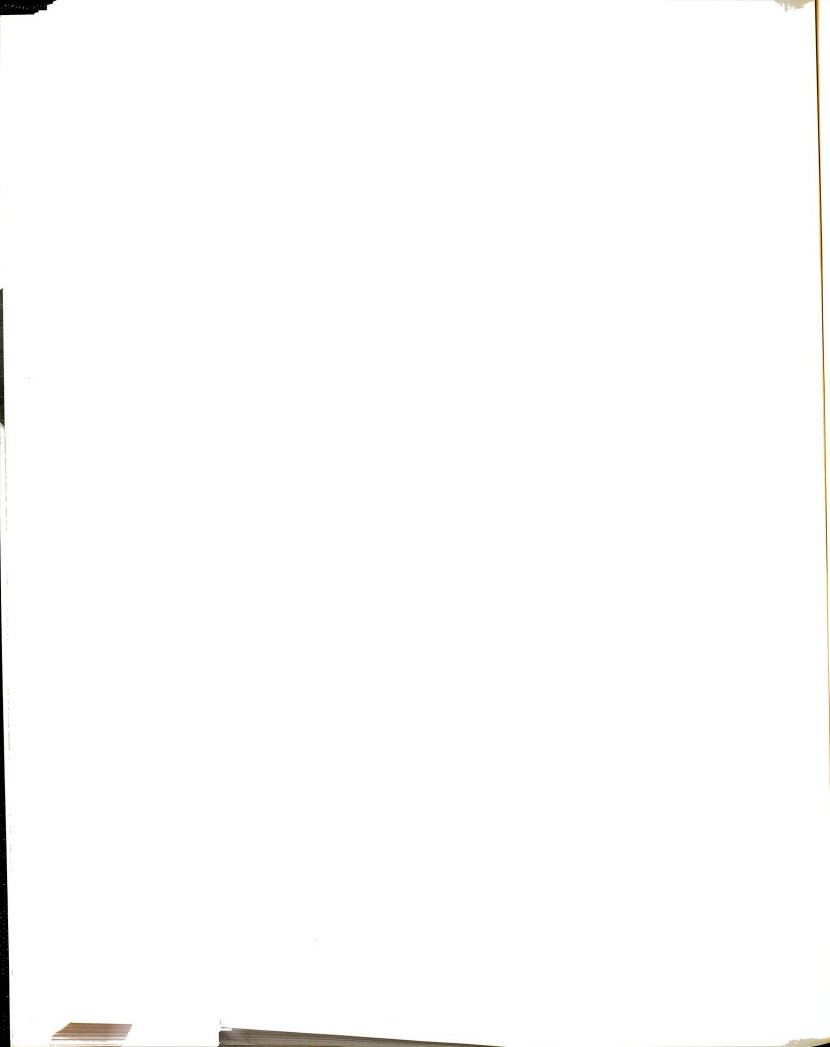


the experimental group or among students in different ability groups. TGT had no statistically significant effects on attitude either. An interesting nonstatistical comparison of ability group means indicated, however, that the TGT-low group had a mean attitude score 13.93 points higher than the control-low group.

A study entitled "Cooperative Versus Competitive Discussion Methods in Teaching Introductory Psychology" was conducted by Haines and McKeachie (1967) at the University of Michigan. Cooperative and competitive techniques of teaching discussion sections of general psychology were compared with respect to their effects on student anxiety, student achievement, and student satisfaction. Five measures were gathered and used to assure comparability of groups: individual student American Council for Education scores, class level, area of concentration, age, and sex. Students in the experimental sections participated in class discussions conducted in a competitive manner for two weeks. The competitive condition resulted in higher tension, poorer achievement, and less satisfaction than the cooperative condition. The researchers concluded that "the nature of the goal interdependency structured in the college classroom has a powerful effect upon student behavior" (p. 390).

Heterogeneous Groups

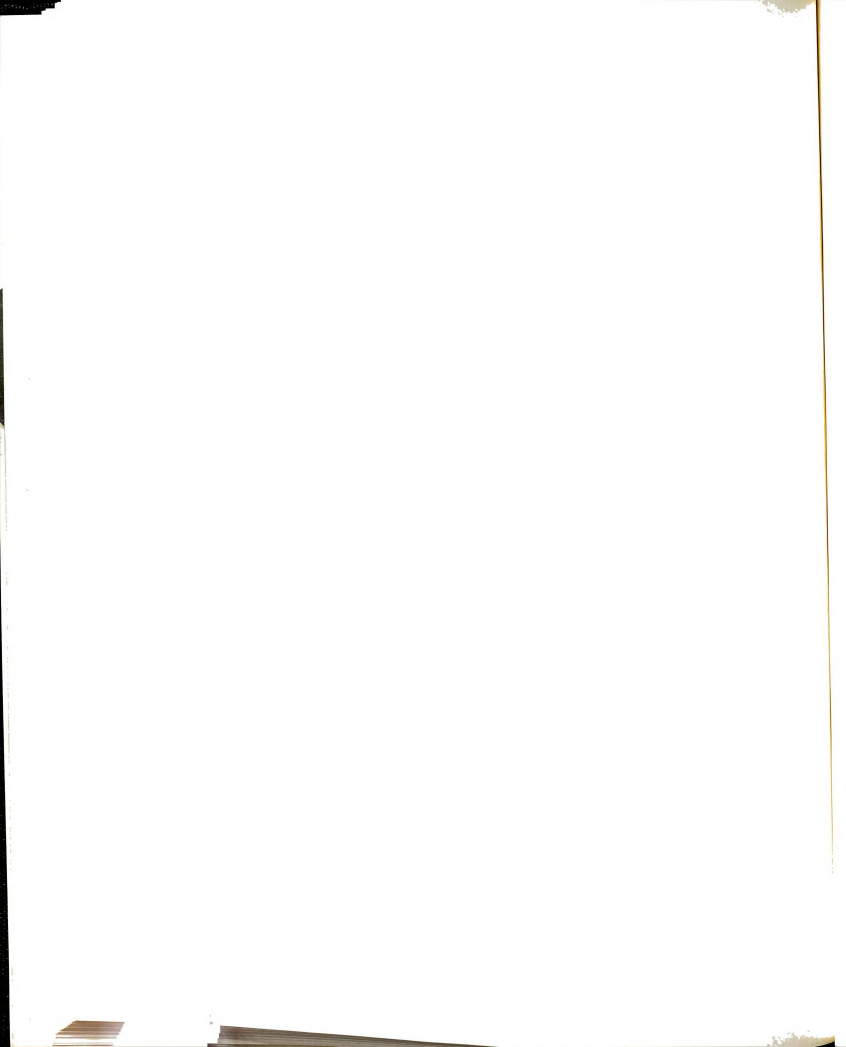
The composition of the cooperative learning or peer group is important. Noiland (1986) investigated the effects of ability groups by conducting a meta-analysis of research findings based on 50 studies reported between 1967 and 1983. The relationships among



various experimental variables including grade level, sex, race/ethnicity, ability level of students, the subject matter being taught, the length of time students were grouped, and the effects of ability grouping were investigated. The major findings were that students who were ability grouped had the same cognitive outcome scores as students who were not ability grouped and had lower affective outcome scores than students who were not ability grouped. Researchers who favored ability grouping found that ability grouping increased achievement, and researchers who opposed ability grouping found the opposite. However, both groups of researchers found that ability grouping had adverse effects on students' self-concept. The findings of this study indicate that the practice of ability grouping does not increase student achievement and does damage students' self-concept.

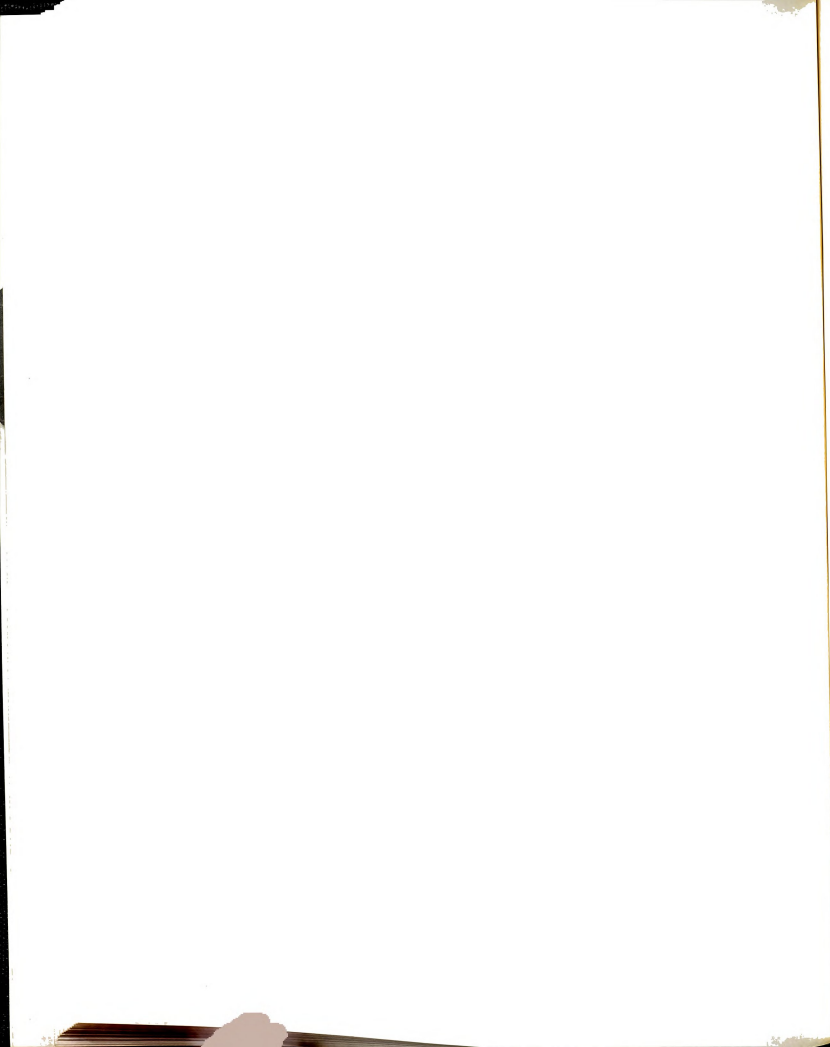
Johnson et al. (1988) undertook another meta-analysis of 98 studies conducted between 1944 and 1982 that showed the relative impact of cooperative, competitive, and individualistic learning experiences on interpersonal attraction among homogeneous and heterogeneous samples of students. The meta-analysis yielded 251 findings. The results supported the belief that cooperative learning experiences promote greater interpersonal attraction among homogeneous students, students from different ethnic groups, and handicapped and nonhandicapped students (p. 3:15).

Davis (1985) conducted research to determine what effect the nature of group complexity had on performance outcomes as task levels increased in difficulty. The researcher sought to determine



the effect that complexity of task and homogeneity of ability had on problem-solving outcomes that were performed in group work units. Subjects in this study were designated into groups of high, mixed, and low ability. Problem-solving tasks that varied on three levels of difficulty were administered to each of the three groups. The researcher found that levels of ability and functioning in group work units were critical factors in determining performance outcomes on problem-solving tasks. The sex of the subjects made no difference. Groups of students functioned more effectively than the sum of their individual responses. The usefulness of the small group was substantiated in this research.

According to Clinton (1984), structuring group activities is an effective technique in dealing with negative attitudes toward racial and ethnic groups. This study was conducted with 46 subjects enrolled in two sections of sociology at a postsecondary institution. The experimental class received instruction through the lecture-discussion method combined with structured group experiences. The control class received instruction through the traditional lecture-discussion method. The same instructor taught both sections. Data were obtained from pretest and posttest scores on the Prejudice and Rationality Scale, the Rokeach Dogmatism Scale, Form E, and a knowledge test of course content, as well as ratings on a course comments questionnaire. The following conclusions were drawn:

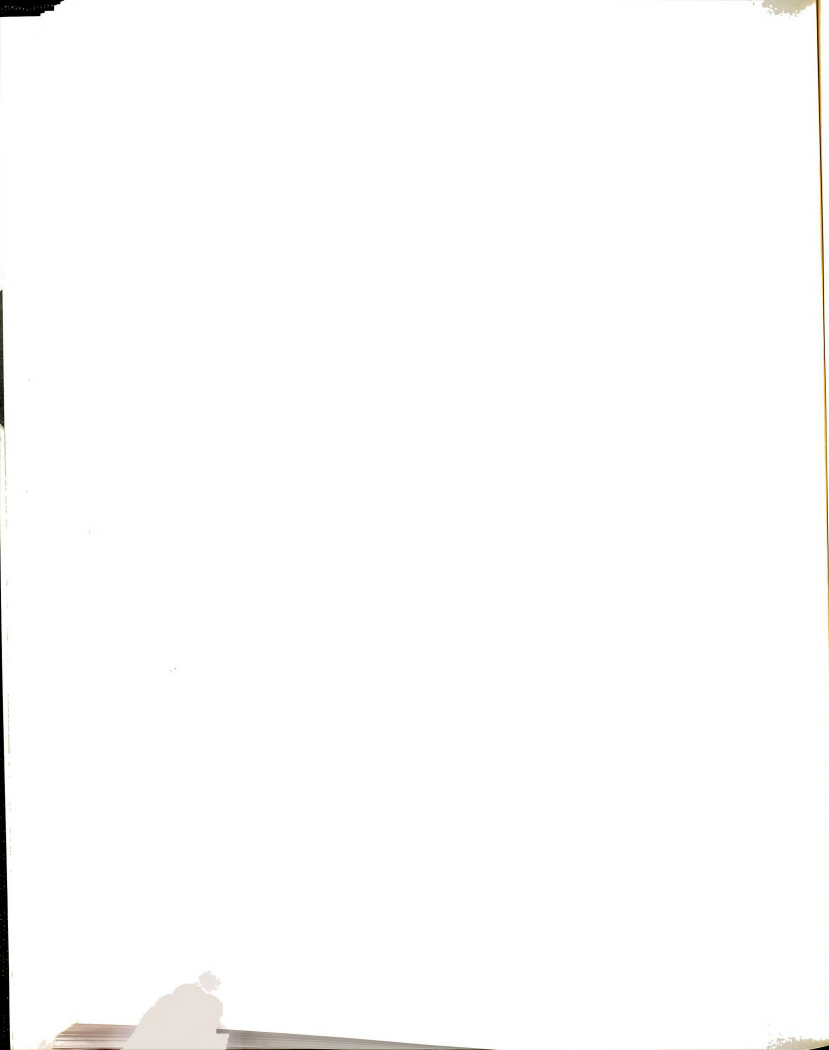


1. The structured group activities approach is an effective technique in dealing with irrational negative attitudes toward racial and ethnic groups.
2. The structured group activities approach is an effective technique in reducing levels of dogmatism.
3. Both the structured group activities and lecture-discussion methods are effective means of increasing knowledge of course content.
4. The traditional lecture-discussion method is perceived by many students as an effective teaching approach.

Contrary to other research findings, Harpster (1985) discovered no significant differences between small/heterogeneous and large/homogeneous groups. The subjects in this study were 57 students divided into nine residence hall leadership groups. The groups met at least twice a month for four months. A trained observer was assigned to attend each group's meetings. Data were generated by group members' monthly evaluation forms and observer ratings from eight consecutive meetings. Groups with five or fewer members were considered the small groups; those with six or more were considered the large groups. Heterogeneity was based on sex, race, and leadership experience. No significant differences were found between the two group structures.

Grading Practices

Cooperative learning is more than merely working together in groups; an important element in cooperative learning is that students who work together share in the success of their groups. The emphasis on mutual responsibility for achievement sets up the cooperative relationship (Johnson et al., 1988). Therefore, the



method of reward (or grade) distribution and acceptance of the method are important.

Two studies (Fraser, Beaman, Diener, & Kelem, 1977) assessed the effects of a peer-monitoring procedure on student performance in introductory social psychology courses. In the first study, students were assigned a learning partner and informed that their final grade would be determined by the average of their individual performances. A class with traditional grading served as the control group. In the second study, grade averaging was employed for experimental peer-monitoring groups of two, three, or four subjects. Both studies indicated the superiority of the peer-monitoring method over the typical individual performance.

Three studies reported in the Journal of Educational Psychology (Beaman, Diener, Fraser, Scott, & Endresen, 1977) examined the effects of variation of peer-monitoring procedures on academic performance of postsecondary students. In the first study, the use of peer monitoring proved to be effective. Partners reported the amount of time spent studying together. If they did not study together, students could report "0" time. Students who studied together for a moderate amount of time showed superior achievement. The average time spent working with partners for these successful subjects was only 67.2 minutes per week, which increased grade averages about 7.1%.

The second study was designed similarly to the first study with the exception that partners who did not study together received a lower grade. One unexpected finding was that the experimental

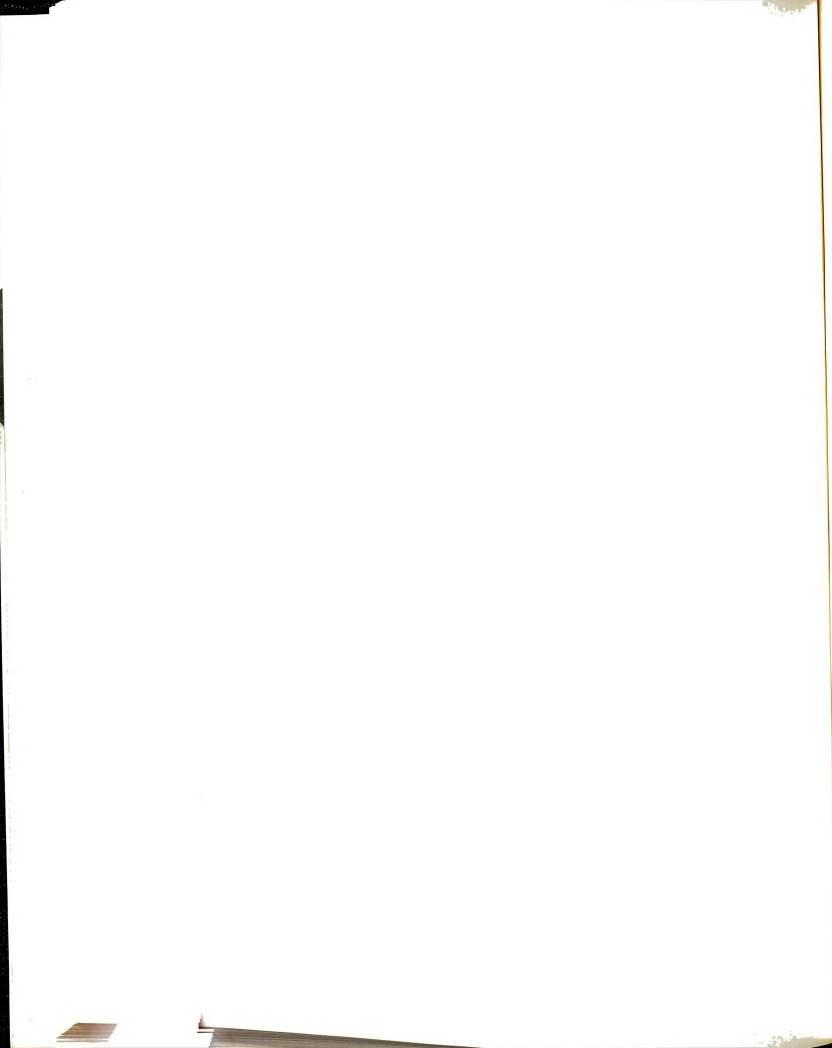
subjects spent 1.76 more hours per week studying than did the control subjects. Because several students indicated that they had falsified their reported study times, the data may be inflated. However, the design to penalize students who did not study together is worth noting.

The third study planned to yield a less conservative test of improved performance and to provide generalization to a population of students taking another course. Here students were invited to select a study partner and to accept for a grade the average of the two individual performances. Of the 108 class members, 14 volunteered for peer monitoring. Each subject signed a brief contract stating that he/she understood the terms of the agreement and would not drop the course after the second week. The higher performance by peer-monitoring subjects was of marginal statistical significance ($p < .08$). Differences in study time between the two groups were not significant. The volunteers in this study spent slightly more time studying (averaging 96 minutes per week) than did the subjects in the previous studies. These three studies suggest that peer-monitoring procedures produce consistently positive effects.

Summary

The literature review focused on the use of peer groups and cooperative learning groups in secondary and postsecondary education. Group composition and grading methods were also reviewed.

Thirty-two research studies on peer groups and cooperative learning groups at postsecondary and secondary levels were



summarized. Of this number, 22 studies investigated peer group methods, and ten studies concerned cooperative learning groups. One meta-analysis on cooperative learning groups was reviewed, which represented 122 studies.

In the research reviewed on peer groups, 18 studies were conducted at postsecondary institutions, and four studies were conducted in secondary schools. In the research reviewed on cooperative learning groups, all ten studies were conducted at the postsecondary level. Sixteen studies investigated the use of peer or cooperative groups in the teaching of writing skills. No studies could be found that investigated the topic of this study, the effectiveness of structured heterogeneous cooperative learning groups in the teaching of business communication at the postsecondary level.

A pretest-posttest design was used in 17 of the studies reviewed. Field research methods of interviewing and structured and unstructured observations were incorporated into two studies. Three studies used a combination of English grades, overall GPA, sex, class level, and/or test scores to determine the effectiveness of peer or cooperative learning groups. Raters were used to evaluate students' papers in three of the studies on writing achievement at the postsecondary level.

Of the 22 studies investigating gains in achievement, five found that gain to be significant at the .05 level.

Thirteen studies specifically investigated changes in attitude between students experiencing peer or cooperative learning groups as

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compared to students experiencing the traditional teaching approach. Of this number, three studies indicated a significant gain in attitude; the other studies indicated a gain, but not at a significant level.

Eight studies assessed interpersonal skill development or the importance of conversation in group process. Each of these studies found gains in student participation in peer or cooperative learning groups, but only one found a significant gain at the .05 level. Obstacles to peer groups were identified in two studies.

Two meta-analyses on heterogeneous grouping were reviewed, which represented 148 studies. The meta-analyses on heterogeneous grouping indicated that although there can be significant differences in achievement between students in cooperative learning groups and traditional classrooms, the greatest improvement occurs in students' attitudes and interpersonal skills. In addition, cooperative learning groups can be effective for all subjects and for students of all ages and backgrounds. Homogeneous ability grouping does not increase student achievement and does damage students' self-concept. Two other studies supported the use of heterogeneous grouping. Five studies were included on group-work grading practices.

Contributions of This Study to the Literature

The primary contribution of this study to the research literature is derived from the focus on the heterogeneous make-up of the learning groups in the instructional treatment at the postsecondary

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level. Other studies of instruction affecting business communication have not used this instructional treatment.

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CHAPTER III

METHODOLOGY

Research procedures were established to evaluate the effectiveness of heterogeneous cooperative learning groups in the teaching of Business Communication II at Ferris State University. The population and sample used in the study, the research design, measures of attitude and achievement, instrumentation for the study, evaluation of group work, instructional design, and data analysis are described in this chapter.

Population and Sample

The population of the study was all students who enrolled in Business Communication II taught at Ferris State University during winter term, 1988-1989. The sample of the study comprised 119 students who were enrolled in four class sections of Business Communication II. Sections were selected according to instructor availability and to provide a cross-section of time of day. The selected sections met four days a week at 8 a.m., 10 a.m., 11 a.m., and 3 p.m. Students were sophomores, juniors, and seniors from five schools within the university. Ninety-six (80.7%) of the students were majors in the School of Business; 14 (11.8%) were majors in the School of Arts and Science; 5 (4.2%) were majors in the School of

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Education; 2 (1.7%) were majors in the School of Technology; and 2 (1.7%) were majors in the School of Pharmacy.

Ninety-four (79%) of the students were enrolled in four-year programs; 25 (21%) were enrolled in two-year programs. Of the total sample, 42% were female and 58% were male. Table 3.1 compares data on the 1988 freshman FSU student body (N = 2,431) and the students in this sample who had ACT data on file (N = 103). These students were representative of the Ferris State University student body.

Table 3.1.--Comparison of sample with FSU student profile.

	FSU N = 2,431		Sample N = 103	
<u>ACT</u>	<u>Ave.</u>	<u>S.D.</u>	<u>Ave.</u>	<u>S.D.</u>
English	15.6	4.8	15.8	5.1
Mathematics	14.3	6.8	14.7	6.9
Social studies	14.5	6.2	14.5	6.7
Natural science	19.5	5.5	18.9	6.3
Composite	16.1	4.7	16.1	5.2
<u>Sex</u>				
Female	41%		42%	
Male	59%		58%	

Research Design

The basic design was a quasi-experimental study using both quantitative and qualitative measurements to assess the effectiveness of heterogeneous cooperative learning groups in the teaching of Business Communication II at the postsecondary level.

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Quasi-experimental Design

The basic design was a nonequivalent control group design with pretesting and posttesting. The three sections using the traditional lecture-discussion strategy represented the control group. The section using the heterogeneous cooperative learning groups was the treatment group. There was no random assignment to treatments; however, representativeness of characteristics in the actual groups was expected, and the comparisons are found in Chapter IV. Campbell and Stanley (1963) acknowledged that this design is well worth using where true experiments are impossible:

One of the most widespread experimental designs in educational research involves an experimental group and a control group both given a pretest and a posttest, but in which the control group and the experimental group do not have pre-experimental sampling equivalence. Rather the groups constitute naturally assembled collectives such as classrooms, as similar as availability permits but yet not so similar that one can dispense with the pretest. (p. 47)

Measures of Attitude and Achievement

Pretest and posttest measures of attitude and achievement were used to study the effectiveness of heterogeneous cooperative learning groups in the teaching of business communication at the postsecondary level. A consent form was distributed to all students involved in this study and collected before the survey was administered. Appendix A contains a copy of this consent form.

Pretest

The pretest ability measures (ACT scores, English 112 or equivalent grade, high school grade point average) were obtained

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from student files, and a pretest writing assignment was administered the first week of class. The pretest attitude measures included the Writing Attitude Inventory and the Group Work Attitude Inventory, which were administered the first week of class.

Posttest

The posttest ability measure was a final writing assignment administered the last week of class. The posttest attitude measures were the Writing Attitude Inventory and the Group Work Attitude Inventory, also administered the last week of the class.

Group Work Evaluation

Students responded to four evaluation instruments designed to assess how the groups were functioning. This information provided a descriptive account of the group work experience.

ACT English

Description. The ACT assessment battery is frequently used for college admission and course placement decisions. At Ferris State University the test is required of all new students for academic advising and course placement decisions. The ACT English Usage Test is one of four tests comprising the ACT assessment. The other tests included in the assessment are Mathematics, Social Studies, and Natural Sciences. The ACT English Usage Test is a 75-item, 40-minute test that measures students' understanding and use of the conventions of standard written English in punctuation, grammar, sentence structure, diction and style, and logic and organization.

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The test does not measure the rote recall of rules of grammar, but stresses the analysis of the kind of effective expository writing that will be encountered in many postsecondary curricula. Scores range from 1 to 33.

Validity. For the ACT English Usage Test, the average correlation estimate between content area universe scores was .90, with a range from .86 for punctuation with diction and style to .93 for grammar with logic and organization (ACT, 1988).

Reliability. Internal consistency procedures ranged from .84 to .93 for individual test scores; generalizability theory models ranged from .81 to .90. Coefficients for the four tests ranged from .72 to .85. Additional validity data are available in the ACT Assessment Program Technical Manual (1988).

English 112 Grade

Description. English 112 is the second of a three-part language and composition sequence that covers expository, persuasive writing, and stylistics. Critical thinking skills are emphasized. Grades are issued on a 12-point scale.

Validity and reliability. The grades received upon the completion of course requirements are routinely accepted as estimates of college achievement.

Instrumentation for the Study

Two instruments were developed to assess students' attitudes toward writing and group work.

Writing Attitudes

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Writing Attitude Inventory

Description. The Writing Attitude Inventory (Appendix B) was a modification of an instrument developed by Sandman (1973) to assess attitudes toward mathematics in students from the eighth through the eleventh grades. The reliability and validity of the instrument were affirmed by Swartz (1982) in its use to assess attitudes toward mathematics in a college population. Individual items were used as shells (Haladyna, Shindoll, & Law, 1987) to be rewritten as items that assessed attitudes toward writing.

The following items are examples from both the original and the rewritten instruments to illustrate the parallel structure that was maintained between the instruments:

Original instrument

1. Mathematics is something which I enjoy very much.
2. My mathematics teacher makes mathematics interesting.
3. No matter how hard I try, I cannot understand mathematics.
4. It doesn't disturb me to work mathematics problems.

Rewritten instrument--writing

1. Writing is something which I enjoy very much.
2. My writing teacher makes writing interesting.
3. No matter how hard I try, I cannot learn to write well.
4. It doesn't disturb me to do writing assignments.

After items were rewritten to assess attitudes toward writing, they were submitted to a group of five faculty in the English Department in the School of Arts and Science at Ferris State University. These faculty reviewed the items for clarity, coherence, completeness, and correctness. Several items were modified, and a final draft of the writing portion of the inventory was prepared.

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Anxiety scale

The Writing Attitude Inventory consisted of 48 items which comprised the six-scale instrument, eight items per scale.

Students responded to a Likert-type, forced-choice response system (strongly agree, agree, disagree, strongly disagree). Items were scored 4, 3, 2, 1, respectively. To accommodate positively and negatively worded items, Sandman's (1973) procedure for recoding responses was used. Then responses were summed across the eight items for each scale. This yielded six separate scores for the attitudinal dimensions rather than a single score, which is common in many attitude scales.

The scales were:

1. Perception of the Writing Teacher--A student's view regarding the teaching characteristics of his/her writing teacher.
2. Anxiety Toward Writing--The uneasiness a student feels in situations involving writing.
3. Value of Writing in Society--A student's view regarding the usefulness of writing knowledge.
4. Self-concept in Writing--A student's perception of his/her own competence in writing.
5. Enjoyment of Writing--The pleasure a student derives from engaging in writing activities.
6. Motivation for Writing--A student's desire to do work in writing beyond the class requirements.

Validity. Validity coefficients, in the form of nonspurious item-to-scale correlations, were derived in an independent study (Swartz, 1987). The highest mean coefficient was found in the Anxiety scale (mean = .67); the lowest mean coefficient was for the

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Value scale (mean = .41). The validity coefficients for the Writing Attitude Inventory are found in Table 3.2.

Table 3.2.--Validity coefficients for writing attitude measures:
corrected item-to-scale correlations.

Teacher		Anxiety		Value	
Item	IS	Item	IS	Item	IS
5	.56	7	.62	1	.42
17	.67	11	.61	9	.34
21	.60	20	.69	12	.41
27	.58	25	.74	15	.37
31	.58	34	.51	23	.55
40	.62	36	.69	24	.49
44	.61	39	.76	33	.38
46	.61	43	.73	38	.35
Mean	.60	Mean	.67	Mean	.41
Self-concept		Enjoyment		Motivation	
Item	IS	Item	IS	Item	IS
4	.63	2	.69	3	.31
10	.64	6	.72	8	.53
16	.53	13	.53	14	.35
19	.65	18	.67	32	.55
22	.45	26	.58	37	.37
30	.72	28	.59	41	.56
35	.49	29	.40	42	.35
48	.47	45	.54	47	.55
Mean	.57	Mean	.59	Mean	.45

Note: IS = independent study data (N = 290) (Swartz, 1987).

Individual item correlations for affective scales in the .30 to .50 range are acceptable (Gable, 1986). None of the 48 items in the Writing Attitude Inventory fell below .30. The correlation distribution of items within the six scales of the Writing Attitude Inventory is found in Table 3.3.

Table 3.3.--Corr
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Table 3.3.--Correlation distribution of items within the six scales of the Writing Attitude Inventory.

	<.30	.30-50	>.50
Perception of the Writing Teacher	0	0	8
Anxiety Toward Writing	0	0	8
Value of Writing in Society	0	7	1
Self-concept in Writing	0	3	5
Enjoyment of Writing	0	1	7
Motivation in Writing	0	4	4

Reliability. The reliability coefficients of the six scales in the Writing Attitude Inventory were derived in an independent study (Swartz, 1987) and are found in Table 3.4.

Table 3.4.--Cronbach's alpha reliability coefficients for the six scales of the Writing Attitude Inventory.

Scale	Alpha
1. Perception of the Writing Teacher	.86
2. Anxiety Toward Writing	.89
3. Value of Writing in Society	.72
4. Self-concept in Writing	.84
5. Enjoyment of Writing	.85
6. Motivation in Writing	.75

The accepted levels of reliability for an instrument depend on the use of the instrument and what the instrument is attempting to measure. In general, attitudes are not as stable as skills; therefore, affective measures tend to have lower reliability levels than

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cognitive measures (Henerson, Morris, & Fitz-Gibbon, 1978). Although it is typical for good cognitive tests to have alpha reliabilities in the high .80s or low .90s, good affective instruments frequently have reliabilities as low as .70 (Gable, 1986). All of the alpha reliability coefficients for the six scales in the Writing Attitude Inventory were at the .70 level or above.

Group Work Attitude Inventory

Description. The shell technique (Haladyna et al., 1987) was also used to develop the Group Work Attitude Inventory (Appendix C). Twelve items were rewritten to address students' attitudes toward group work. These 12 items comprised a three-scale instrument as derived from factor analysis. One scale consisted of eight items; the second scale, two items; and the third scale, three items.

The following examples illustrate the parallel structure that was maintained between the original instrument and the rewritten instrument to assess attitudes on group work:

Original instrument

1. Mathematics is something which I enjoy very much.
2. My mathematics teacher makes mathematics interesting.
3. No matter how hard I try, I cannot understand mathematics.
4. It doesn't disturb me to work mathematics problems.

Rewritten instrument--group work

1. Working in groups is something which I enjoy very much.
2. Group leaders make teamwork interesting.
3. No matter how hard I try, I cannot learn to work well in groups.
4. It doesn't disturb me to participate in group assignments.

Students responded to a Likert-type, forced-choice response system (strongly agree, agree, disagree, strongly disagree). Items

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were scored 4, 3, 2, 1, respectively, and summed across the items for each of the three scales. Three separate scores for the attitudinal dimension were derived.

The scales were:

1. Involvement in Group--A student's view regarding the degree of motivation, enjoyment, support, and success present in group work.
2. Value of Group--A student's view regarding the usefulness of group work activity.
3. Anxiety Toward Group--The uneasiness a student feels in group situations.

Validity and reliability. Tests of validity and reliability appear in Chapter IV.

Writing Achievement Assessment

Description. Writing achievement was measured through a pre- and post-writing assignment (Appendix D) evaluated by a rating team. The rating team consisted of four instructors who were experienced in teaching Business Communication II at Ferris State University.

Instrument. Teachers of business communication were consulted, communication textbook suggestions were reviewed, and studies using evaluation instruments for writing were examined in order to prepare the evaluation instrument used in this study. A 14-item evaluation form (Appendix E) for both pre- and posttest letters was devised.

The OA 210 Evaluation Form was divided into four areas for evaluation: task, general merit, format, and mechanics. Each section was assigned a maximum number of points from which deductions could be made during the evaluation process. The "task"

section (2 points)
response to the
assessed the situation
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section (5 points)
punctuation.

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Table 3.5.--P

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section (2 points) referred to the overall effectiveness of the response to the situation. The "general merit" section (12 points) assessed the student's ability to use the correct letter arrangement for the situation. The "format" section (12 points) dealt with identifying and using the letter style requested. The "mechanics" section (5 points) highlighted errors in spelling, grammar, and punctuation.

Instrument review. Members of the rating team critiqued the proposed evaluation form; suggestions for improvements were incorporated into the final rating instrument. Members of the rating team agreed that the final evaluation form was a valid measure for evaluating student performance in letter-writing skills.

Rater agreement. A training session was conducted to assess rater agreement. After a thorough discussion of the evaluation form, the rating team individually scored five letters and established rater agreement. Raters' scores for each letter reviewed during this training session provide evidence of agreement levels (Table 3.5).

Table 3.5.--Raters' scores on practice writing evaluation.

	Rater 1	Rater 2	Rater 3	Rater 4
Letter A	7	9	9	9
Letter B	13	10	10	10
Letter C	11	8	9	9
Letter D	11	14	11	14
Letter E	7	6	7	6

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Final Course

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Organization of materials. Names and dates were removed from the students' papers and a coding system was used to provide anonymity. The code number that appeared at the top of each paper was an alpha-numeric combination. Twenty-two folders were prepared that contained 20 letters each; two folders contained 18 letters each. A total of 476 letters were evaluated. These folders were lettered A through L, and each letter within the folder was numbered. Pretest letters were coded D, Q, or P; posttest letters were coded M, W, or Z. Examples of letter codes would be BP13 and HZ7. The rating team independently evaluated pre- and post-writing assignments from four sections of Business Communication II.

Procedure. The four-person rating team worked independently in the Conference Room in the School of Business. A matrix was prepared to indicate which folders each rater would evaluate. Each rater was paired with the other raters on an equal number of folders. The rating session lasted approximately seven hours.

The papers in each folder were read by two raters; the raters' scores were averaged to determine the final score assigned to the paper. If raters' scores varied by more than four points, a third rater was asked to evaluate the paper. Of the 476 papers evaluated, 53 (11%) papers required a third reading.

Final Course Grade

Description. The final course grade was determined by the total points earned divided by the total points possible. Points were earned on tests, individual assignments, and group assignments

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were earned on tests, individual assignments, and group assignments in the treatment group. The scale used to determine the final grades was 92% = A; 90% = A-; 88% = B+; 82% = B; 80% = B-; 78% = C+; 72% = C; 70% = C-; 68% = D+; 62% = D; 60% = D-; and below = F.

Validity and reliability. The grades received upon the completion of course requirements are routinely accepted as usable estimates of college achievement.

Evaluation of Group Work

The effectiveness of the cooperative learning groups, from the students' perspective, was explored by using student evaluations. Students in the treatment group recorded their observations about the effectiveness of their groups during the cooperative learning experience. Beginning the fifth week of the term, students were asked to complete specialized evaluation forms indicating significant events involving the students' cooperating with each other and the overall effectiveness of the group process. Students completed forms entitled: "Cooperative Learning Groups Observation Sheet," "Cooperative Learning Groups Self-evaluation Checklist," "Cooperative Learning Groups Evaluation Sheet," and "Group Work Evaluation." Sample forms are found in Appendices F through I.

The content of the group work evaluations was analyzed to provide a descriptive account of the effectiveness of the group activity.

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Instructional Design

The instructional design for the control and treatment groups included the general goals and specific objectives of Business Communication II and the instructional units to be covered. Cooperative learning groups were used in the treatment group, not the control group.

General Goals

The general goals of Business Communication II are:

1. To understand the process involved in preparing effective written communication for business and management.
2. To strengthen writing skills and integrate correct grammar and punctuation in the preparation of business correspondence.
3. To develop cooperating skills such as working together, decision making, handling conflict and controversy, listening, and sharing while involved in a team task. (Treatment group only.)

Specific Objectives

The specific objectives of Business Communication II are:

1. The student will be able to define and explain the communication process.
2. Using case studies/situations, the student will compose business letters, executive summaries, and memoranda correctly according to the following criteria:
 - a. The letter is correct in the basics of purpose, content, style, and form.
 - b. The letter is grammatically correct and punctuated correctly.
 - c. The letter is proofread and edited for mailability.

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Instructional Units

The topics covered in Business Communication II included:

1. Communication Within Organizations
2. Principles of Effective Communication
3. Writing Letters, Short Reports, and Memorandums
 - a. Writing about the routine and the favorable
 - b. Writing about the unpleasant and the uncertain
 - c. Writing special goodwill letters
 - d. Writing application letters and resumes
 - e. Writing persuasive letters
 - f. Writing memorandums
4. The Job Search and Interviewing

Grouping

Heterogeneous cooperative learning groups of three students were used in the treatment group. Heterogeneity was determined by high school GPAs.

Heterogeneous. Heterogeneous or multi-ability groups were organized in order to enable students to work with others of varied ability. Multiple studies have examined various kinds of groupings, measured different kinds of learning, and included students at various grade levels and ages. Studies have shown that homogeneous grouping does not alleviate attitude and behavior problems, but contributes to them (Oakes, 1985). One conclusion has emerged clearly: "No group of students has been found to benefit consistently from being in a homogeneous group" (p. 7).

Johnson and Johnson (1987) concurred with the need to develop heterogeneous rather than homogeneous groups. They stated, "The more homogeneous the participants, the less each member adds to the

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resources present in the others. In general homogeneous groups make less effective decisions than heterogeneous groups" (p. 91).

The findings of an independent study on the effects of attitudes and aptitudes in predicting final course grades (Swartz, 1987) indicated that high school GPA was the best predictor of the final course grade. An additional finding indicated that males and females should be considered separately because of noted differences on several measures (ACT English, ACT Natural Science, and high school GPA). Therefore, students were assigned to groups predominantly based on their high school GPAs, with attention given to representativeness by sex.

Students' high school GPAs were obtained from a mainframe course file developed the first day of the term. In cases where this information was not available, students were asked to report the averages. Names of students in the treatment section of Business Communication II were divided into groups of high, mid, and low according to their high school GPA. Heterogeneous cooperative learning groups were formed by randomly drawing one name from each of these groups.

Group size. Johnson and Johnson (1987) reported that

It is important that decision-making groups be large enough so that needed resources and diversity are present, but small enough so that everyone's resources are fully utilized, participation is high, acceptance and support by all members is possible, and coordination is easy. (p. 92)

In an interview at a summer workshop on cooperative learning, Johnson (1988) stated that a group of three is considered a "work

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Grading.

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group" and would be appropriate for learning business writing at the postsecondary level. Therefore, these cooperative learning groups consisted of three students with varying abilities. Both females and males were represented in these groups.

Grading. An important component in successful cooperative learning groups is the development of a positive interdependence among the members of the group. Part of this interdependence is developed through the reward (grade) system incorporated in the class. Webb (1982) cited several studies that compared individual and group reward structures. One of the reward structures described was the "weighted individual score." Under this system, the individual's score was a weighted combination of his/her score and the group average. The weighted individual score concept was adopted as the grading practice incorporated in the heterogeneous cooperative learning groups on papers that were designated as "group" projects. The final score on an individual's assignment was equal to 67% of the individual's grade plus 33% of the group grade. The objective tests and nongroup assignments were graded on an individual basis only.

Data Analysis

The study was conducted during the winter term at Ferris State University and was concluded at the end of that term. The ACT scores, English 112 or equivalent scores, and high school GPAs were requested from the Testing Office.

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Statistical Processing

A computerized record for each student was accumulated. The format was as follows:

	<u>Columns</u>	<u>Data</u>
Line 1:	1-9	ID
		<u>ACT</u>
	11-12	English
	14-15	Math
	17-18	Social Science
	20-21	Natural Science
	23-24	Composite
		<u>Questionnaire Data</u>
	27-29	Final Course Grade
	31-33	High School GPA
	36-42	Curriculum Code
	44-47	Section Number
	70-72	English 112 (or equivalent) Grade
Line 2	51-52	<u>Group Work Attitude Pretest</u>
	54	Involvement in Group
	56	Value of Group
		Anxiety Toward Group
		<u>Group Work Attitude Posttest</u>
	59-60	Involvement in Group
	62	Value of Group
	64	Anxiety Toward Group
Line 3	12	Sex (0 = Female; 1 = Male)
		<u>Writing Attitude Pretest</u>
	16-17	Perceptions of the Writing Teacher
	19-20	Anxiety Toward Writing
	22-23	Value of Writing in Society
	25-26	Self-concept in Writing
	28-29	Enjoyment of Writing
	31-32	Motivation for Writing
		<u>Writing Attitude Posttest</u>
	43-44	Perceptions of the Writing Teacher
	46-47	Anxiety Toward Writing
	49-50	Value of Writing in Society
	52-53	Self-concept in Writing
	55-56	Enjoyment of Writing
	58-59	Motivation for Writing

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The student data were entered on the mainframe IBM computer at Ferris State University through the terminal system. The data were analyzed using the SPSSx statistical package.

Criteria for Analyzing Research Questions

Quantitative and qualitative measures were used to address four research questions.

Research Question 1. Do students who experience heterogeneous cooperative learning groups differ from those who experience traditional instruction in attitudes toward writing and group work as assessed by the Writing Attitude Inventory and the Group Work Attitude Inventory?

The Writing Attitude Inventory and the Group Work Attitude Inventory were used as pre- and posttest measures. From the posttest measures, nine scores were computed. MANOVA was used to test for significant differences in attitudes toward writing and group work after participating in cooperative learning groups. MANOVA was used to determine whether the scores differed from zero. The .05 alpha level was used.

Research Question 2. Do students who experience heterogeneous cooperative learning groups differ from those who experience traditional instruction in achievement in business writing as assessed by a post-measure of business letter writing?

As the pretest measure, students responded during the first week of class to a case problem involving the preparation of a business letter. As the posttest measure, students responded to the

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same case situation. A t-test was used to determine whether the means differed significantly. The .05 alpha level was used.

Research Question 3. Is business writing skill, as measured by a posttest writing assignment, related to pre-course ability (ACT scores, English 112 or equivalent grade, high school GPA, pretest writing assignment) and pre-course attitudes (toward writing and group work)?

Step-wise multiple regression was used to determine the relative influence of the pretest measures on final achievement. The .05 alpha level was used to assess the contribution of the predictors.

Research Question 4. Do students who experience heterogeneous cooperative learning groups report, through written comments, favorable final evaluations?

The content of the students' periodic and final course evaluations was analyzed by the instructor to identify the perceived strengths and weaknesses of heterogeneous cooperative learning groups.

Summary

A nonequivalent control group design with pretesting and posttesting was used to assess the effectiveness of heterogeneous cooperative learning groups in the teaching of business communication at the postsecondary level. Research questions were concerned with (a) the attitudes of students toward writing and group work, (b) the achievement of students in business writing, (c)

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learning groups

the relationship of pre-course ability and attitude measures to achievement, and (d) the effectiveness of heterogeneous cooperative learning groups.

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CHAPTER IV

FINDINGS

The study was designed to evaluate the effectiveness of heterogeneous cooperative learning groups in teaching business communication at the postsecondary level. The findings were derived from the scores and data collected from 119 students enrolled in Business Communication II at Ferris State University during winter quarter, 1988. The treatment group consisted of 30 students who participated in cooperative learning groups. The control group consisted of 89 students who were instructed in the traditional lecture-discussion method. Pre- and posttest measures were used to assess students' attitudes toward writing, attitudes toward group work, and writing ability. Students' comments were recorded for qualitative analysis.

Four research questions concerned with (a) the attitudes of students toward writing and group work, (b) the achievement of students in business writing, (c) the relationship of pre-course ability and attitude measures to achievement, and (d) the effectiveness of heterogeneous cooperative learning groups were raised. The statistical analysis was guided by the research questions, which are restated as null hypotheses in this chapter. Before the analysis, validity and reliability, a description of the

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Validity and Reliability

Writing Attitude Inventory

Validity. Validity coefficients were presented in Chapter III on data gathered in an independent study entitled "The Effects of Attitudes and Aptitudes in Predicting Final Course Grades: Implications for Multi-Ability Group Organization in Business Communication Classes" (Swartz, 1987). This study on the effectiveness of heterogeneous cooperative learning groups in the teaching of business communication at the postsecondary level also provided the opportunity to explore further the validity of the Writing Attitude Inventory. The validity coefficients and the scale means of the independent study and the pretest and posttest of this study are compared in Table 4.1. Highest coefficients were found in the independent study for the Anxiety Toward Writing scale (mean = .67); for the pretest, Anxiety Toward Writing (mean = .65); and for the posttest, Perception of the Writing Teacher (mean = .78). The lowest coefficients were found in the independent study for the Value of Writing in Society (mean = .41); for the pretest, Motivation for Writing (mean = .40); and for the posttest, Value of Writing in Society (mean = .45).

Table 4.1.--Va
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Item	Teacher	
	IS	PF
5	.56	.41
17	.67	.51
21	.60	.61
27	.58	.61
31	.58	.61
40	.62	.71
44	.61	.61
46	.61	.61
Mean	.60	.61

Item	Self-con	
	IS	PO
4	.63	.61
10	.64	.61
16	.53	.61
19	.65	.61
22	.45	.61
30	.72	.61
35	.49	.61
48	.47	.61
Mean	.57	.61

Note: IS =
PR =
PO =

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Table 4.1.--Validity coefficients for writing attitude measures:
Corrected item-to-scale correlations.

Teacher				Anxiety				Value			
Item	IS	PR	PO	Item	IS	PR	PO	Item	IS	PR	PO
5	.56	.46	.71	7	.62	.73	.67	1	.42	.30	.41
17	.67	.58	.78	11	.61	.65	.67	9	.34	.37	.49
21	.60	.60	.86	20	.69	.57	.70	12	.41	.47	.50
27	.58	.64	.71	25	.74	.65	.67	15	.37	.45	.59
31	.58	.62	.76	34	.51	.47	.58	23	.55	.39	.53
40	.62	.70	.81	36	.69	.68	.70	24	.49	.49	.40
44	.61	.64	.81	39	.76	.74	.69	33	.38	.49	.36
46	.61	.62	.79	43	.73	.69	.61	38	.35	.34	.30
Mean	.60	.61	.78	Mean	.67	.65	.66	Mean	.41	.41	.45

Self-concept				Enjoyment				Motivation			
Item	IS	PR	PO	Item	IS	PR	PO	Item	IS	PR	PO
4	.63	.59	.66	2	.69	.64	.64	3	.31	.12	.19
10	.64	.67	.71	6	.72	.57	.68	8	.53	.62	.61
16	.53	.55	.44	13	.53	.42	.52	14	.35	.39	.31
19	.65	.56	.61	18	.67	.52	.59	32	.55	.49	.43
22	.45	.48	.53	26	.58	.55	.54	37	.37	.36	.59
30	.72	.71	.73	28	.59	.50	.51	41	.56	.53	.61
35	.49	.42	.40	29	.40	.08	.12	42	.35	.15	.27
48	.47	.36	.45	45	.54	.32	.50	47	.55	.51	.64
Mean	.57	.54	.57	Mean	.59	.45	.51	Mean	.45	.40	.46

Note: IS = Independent study data (N = 290) (Swartz, 1987).
 PR = Pretest data (N = 119).
 PO = Posttest data (N = 119).

Individual item correlations for affective scales fell below the acceptable .30 level three times in the pretest measurement and three times in the posttest measurement (Gable, 1986). In the Enjoyment of Writing scale, the item "I like to play games that use words" fell in the less-than-acceptable range for an individual item

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in both the pretest and posttest. In the Motivation for Writing scale, two items were in the less-than-acceptable range in both the pretest and posttest. These items were "I like the easy writing assignments best," and "It is important to me to understand the work I do in writing class." The correlation distributions of items within the six scales of the Writing Attitude Inventory are found in Table 4.2.

Table 4.2.--Correlation distribution of items within the six scales of the Writing Attitude Inventory.

	Independent Study			Pretest			Posttest		
	<.30	.30-.50	>.50	<.30	.30-.50	>.50	<.30	.30-.50	>.50
Teacher	0	0	8	0	1	7	0	0	8
Anxiety	0	0	8	0	1	7	0	0	8
Value	0	7	1	0	8	0	0	6	2
Self-concept	0	3	5	0	3	5	0	3	5
Enjoyment	0	1	7	1	3	4	1	1	6
Motivation	0	4	4	2	3	3	2	2	4

Reliability. The reliability data gathered in this study were compared to the reliability data derived from the independent study (Table 4.3). All of the alpha reliability coefficients for the six scales in the Writing Attitude Inventory were at the .70 acceptability level (Gable, 1986).

Table 4.3.--Cro
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Scale

1. Perception
2. Anxiety To
3. Value of f
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5. Enjoyment
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Note: IS =
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Table 4.3.--Cronbach's alpha reliability coefficients for the six scales of the Writing Attitude Inventory.

Scale	Alpha		
	IS	PR	PO
1. Perception of the Writing Teacher	.86	.86	.94
2. Anxiety Toward Writing	.89	.88	.89
3. Value of Writing in Society	.72	.72	.75
4. Self-concept in Writing	.84	.82	.84
5. Enjoyment of Writing	.85	.75	.80
6. Motivation in Writing	.75	.70	.76

Note: IS = Independent study data (N = 290) (Swartz, 1987).
 PR = Pretest data (N = 119).
 PO = Posttest data (N = 119).

Group Work Attitude Inventory

Validity. Validity coefficients (Table 4.4) in the form of nonspurious item-to-scale correlations were derived from pretest and posttest data. Highest coefficients were found in the Anxiety Toward Group scale for both the pretest (mean = .64) and posttest (mean = .77). Lowest coefficients were found in the Value of Group scale for both the pretest (mean = .41) and the posttest (mean = .58). The coefficients for the Involvement in Group scale in the pretest and posttest were .61 and .65, respectively. The 12 items that comprised three scales in the Group Work Attitude Inventory had validity coefficients at or above the acceptable level of .30 (Gable, 1986).

Table 4.4.--Va
Co

Involvement i
Group

Item PR

49	.71
50	.71
51	.48
52	.68
56	.68
58	.40
59	.67
60	.57

Mean .61

Note: PR =
PO =

The con
of the Group

Table 4.5.-

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Value of G

Table 4.4.--Validity coefficients for Group Work Attitude measures:
Corrected item-to-scale correlations.

Involvement in Group			Value of Group			Anxiety Toward Group		
Item	PR	PO	Item	PR	PO	Item	PR	PO
49	.71	.76	53	.41	.58	55	.64	.77
50	.71	.80	54	.41	.58	57	.64	.77
51	.48	.47						
52	.68	.63						
56	.68	.75						
58	.40	.50						
59	.67	.73						
60	.57	.52						
Mean	.61	.65	Mean	.41	.58	Mean	.64	.77

Note: PR = Pretest data (N = 119).
PO = Posttest data (N = 119)

The correlation distribution of items within the three scales of the Group Work Attitude Inventory are found in Table 4.5.

Table 4.5.--Correlation distribution of items within the three scales of the Group Work Attitude Inventory.

	Pretest			Posttest		
	<.30	.30-.50	>.50	<.30	.30-.50	>.50
Involvement in Group	0	2	6	0	2	6
Anxiety Toward Group	0	0	2	0	0	2
Value of Group	0	2	0	0	2	0

Reliability

Group Work Attitude

posttest administration

Table 4.6.--Cronbach's

Scale

1. Involvement
2. Value of
3. Anxiety

In the

Group scale

posttest reliability

A total

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communication

103 students

88 students

high school

English

students in

Reliability. The reliabilities of the three scales of the Group Work Attitude Inventory were derived from the pretest and posttest administration (Table 4.6).

Table 4.6.--Cronbach's alpha reliability coefficients for the three scales of the Group Work Attitude Inventory.

Scale	Alpha	
	Pretest N = 119	Posttest N = 119
1. Involvement in Group	.86	.88
2. Value of Group	.57	.73
3. Anxiety Toward Group	.78	.87

In the Group Work Attitude Inventory, the pretest Value of Group scale reliability (.57) was below the accepted level; however, posttest reliability (.73) was acceptable (Gable, 1986).

Description of the Sample

A total of 119 students participated in this study of heterogeneous cooperative learning groups in the teaching of business communication at Ferris State University. Of these 119 students, 103 students had ACT scores on file with the university. A total of 88 students had high school GPAs on file; 19 students reported their high school GPAs; 12 students had missing data.

English 112 (or equivalent) grades were available for 111 students in the study. Four of the remaining students received

credit-by-exam
the prerequisite
college record

Overall,
were male.
revealed the
(Table 4.7) :

Table 4.7.--

Section	Total
1010	:
1030	:
1080	:
Total	

credit-by-examination for English 112, three students had not met the prerequisite, and one student received transfer credit but no college records were available.

Overall, 50 (42%) of the sample members were female; 69 (58%) were male. A comparison between the control and treatment groups revealed the similarity of the two groups on group composition (Table 4.7) and pre-course ability (Table 4.8).

Table 4.7.--Comparison between control and treatment groups on group composition.

Control Group						Treatment Group					
Section	Total N	Male		Female		Section	Total N	Male		Female	
		N	%	N	%			N	%	N	%
1010	28	18	64	10	36	1040	30	16	53	14	47
1030	29	16	55	13	45						
1080	32	19	59	13	41						
Total	89	53	60	36	40	Total	30	16	53	14	47

Table 4.8.--Co
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Ability Measu

ACT

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Mathematics
Social Studies
Natural Science
Composite

High School

English 112

Student

1988-1989, 1

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Table 4.9.-

School

Arts and S
Business
Education
Pharmacy
Technology

Total

^aTot:

Table 4.8.--Comparison between control and treatment groups on pre-course ability.

Ability Measure	Control Group Mean	Control Group S.D.	Treatment Group Mean	Treatment Group S.D.
<u>ACT</u>				
English	16.4	5.1	14.3	4.9
Mathematics	15.6	6.9	12.5	6.3
Social Studies	14.7	6.7	13.9	6.9
Natural Science	19.7	6.3	16.8	5.8
Composite	16.7	5.1	14.5	5.0
High School GPA	2.7	.5	2.6	.5
English 112	2.5	.6	2.5	.8

Students enrolled in Business Communication during winter term, 1988-1989, represented five of the seven schools/colleges within the university. Only the College of Optometry and the School of Allied Health were not represented in this sample (Table 4.9).

Table 4.9.--Student enrollment by schools.

School	Number	Percent
Arts and Science	14	11.8
Business	96	80.7
Education	5	4.2
Pharmacy	2	1.7
Technology	2	1.7
Total	119	100.1 ^a

^aTotal greater than 100% due to rounding.

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Exploration of Pretreatment Differences

Several statistical procedures were used to determine what differences, if any, existed between the treatment and control groups at the beginning of the research.

Data missing from student records were estimated by substituting the mean scores. According to Tabachnik and Fidell (1983), means are frequently inserted for missing values in a data set in order to avoid eliminating existing data in multivariate analysis. The mean high school GPA (2.671) was substituted for 12 students in the sample, and the mean for English 112 (2.516) was substituted for eight students.

MANOVA was used to compare pretest ability and attitudes between the groups. The MANOVA produced a Wilks' lambda of .80938 and a probability level of 0.300; thus the two groups were considered to be similar (Table 4.10). No difference was found between the two groups on the measures of ACT scores (English, Mathematics, Social Science, Natural Science, Composite), English 112 or equivalent grade, high school GPA, prewriting ability, or attitudes toward writing and group work.

Univariate analyses were conducted to investigate more closely the relationship between the treatment and control groups and the selected variables. Findings revealed significant differences between groups for the variables ACT Mathematics ($p = .046$), ACT Natural Science ($p = .032$), and Self-concept in Writing ($p = .024$) when studied independently. However, because MANOVA was

insignificant
univariate an

4.10.--Analysis

MANOVA:

Variables

ACT

English
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Social scier
Natural scie
Composite

High school

English 112

Writing Att

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Value of wr
Self-concep
Enjoyment
Motivation

Group Work

Involvement
Value of g
Anxiety to

Prewriting

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insignificant, the differences between groups as identified in the univariate analysis were interpreted as chance differences.

4.10.--Analysis of pretest differences between groups.

MANOVA: Wilks' lambda = .80938 F = 1.17753 p = .300		
Variables	F	p
<u>ACT</u>		
English	3.42032	.067
Mathematics	4.07189	.046*
Social science	0.29077	.591
Natural science	4.73968	.032*
Composite	3.87041	.052
High school GPA	0.63460	.428
English 112	0.78966	.376
<u>Writing Attitudes</u>		
Perception of the writing teacher	3.31399	.072
Anxiety toward writing	1.85439	.176
Value of writing in society	0.78676	.377
Self-concept in writing	5.28403	.024*
Enjoyment of writing	1.09958	.297
Motivation for writing	1.11094	.294
<u>Group Work Attitudes</u>		
Involvement in group	0.10860	.742
Value of group	1.17197	.282
Anxiety toward group	0.50623	.478
Prewriting ability	0.72610	.396

*Significant at the .05 level.

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Further consideration led to speculation that the inclusion of a wide variety of measures in MANOVA may have resulted in a camouflage effect on a potentially significant subset of variables such as the ACT measures. Consequently, separate MANOVAs were performed for the ACT measures, grade measures, and attitudinal measures. None of the MANOVAs were statistically significant. Thus, the original MANOVA was supported.

T-tests were performed on the variables to further describe pretreatment similarities and differences (Table 4.11). Of the 17 dependent variables considered in this study, the individual treatment group means were slightly higher on three scales: Anxiety Toward Writing, Involvement in Group, and Value of Group. The control group means were slightly higher on the ACT variables, high school GPA, prewriting, Perception of the Writing Teacher, Value of Writing in Society, Self-concept in Writing, Enjoyment of Writing, Motivation for Writing, and Anxiety Toward Group. The mean for English 112 was the same for both the treatment and control groups.

4.11.--Analysis
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Variable

ACT

English
Mathematics
Social Science
Natural Science
Composite

High School

English 112

Prewriting

Writing Att

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Value in S
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Motivation

Group Work

Involvement
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4.11.--Analysis of the ability and attitude differences between the treatment and control groups.

Variable	Treatment Group			Control Group			Mean Diff.
	N	Mean	S.D.	N	Mean	S.D.	

<u>ACT</u>							
English	28	14.3	4.4	75	16.4	5.1	2.1
Mathematics	28	12.5	6.3	75	15.6	6.9	3.1
Social Science	28	13.9	6.9	75	14.7	6.7	0.8
Natural Science	28	16.8	5.8	75	19.7	6.3	2.9
Composite	28	14.5	5.0	75	16.7	5.1	2.2
High School GPA	30	2.6	0.1	89	2.7	0.5	0.1
English 112	30	2.5	.8	89	2.5	0.6	0.0
Prewriting	30	8.6	3.2	89	8.8	3.7	0.2
<u>Writing Attitudes</u>							
Perception of Teacher	30	23.6	2.7	89	24.4	3.9	0.8
Anxiety Toward Writing	30	17.9	3.8	89	16.8	3.7	1.1
Value in Society	30	26.6	3.1	89	27.0	2.9	0.4
Self-concept in Writing	30	21.0	3.0	89	22.6	3.7	1.6
Enjoyment of Writing	30	20.4	2.6	89	21.0	3.4	0.6
Motivation for Writing	30	19.2	2.9	89	20.2	3.4	1.0
<u>Group Work Attitudes</u>							
Involvement in Group	30	23.8	4.0	89	23.2	4.0	0.6
Value of Group	30	6.9	1.1	89	6.7	1.1	0.2
Anxiety Toward Group	30	3.4	1.2	89	3.8	1.4	0.4

Analysis of Research Questions

The first three research questions were evaluated by quantitative methods. Data were analyzed using the SPSSx statistical package. The fourth research question was analyzed qualitatively.

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Differences in Attitudes
Toward Writing and Group Work

The first research question was, "Do students who experience heterogeneous cooperative learning groups differ from those who experience traditional instruction in attitudes toward writing and group work as assessed by the Writing Attitude Inventory and the Group Work Attitude Inventory?"

Ho 1: There is no difference between the attitudes toward writing and group work of students participating in heterogeneous cooperative learning group instruction and traditional instruction.

MANOVA was used to test for significant differences between the treatment and control groups in attitudes toward writing and group work as measured by the posttest. Wilks' lambda had an F-value of 2.58987 and a probability of 0.010 (Table 4.12). Therefore, Hypothesis 1 was rejected. There was a significant difference between the attitudes toward writing and group work of students participating in heterogeneous cooperative learning group instruction and traditional instruction.

Univariate F-test revealed that the significance was limited to two variables: Perception of the Writing Teacher ($p = .00$) and Involvement in Group ($p = .01$).

Table 4.12.--

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Table 4.12.--Differences in attitudes toward writing and group work between groups.

MANOVA: Wilks' lambda = .82383 F = 2.58987 p = .010		
Variable	F	Sig. of F
<u>Writing Attitudes</u>		
Perception of the Writing Teacher	12.97526	.000*
Anxiety Toward Writing	0.08820	.767
Value of Writing in Society	2.57511	.111
Self-concept in Writing	0.14012	.709
Enjoyment of Writing	0.30252	.583
Motivation for Writing	0.03385	.854
<u>Group Attitudes</u>		
Involvement in Group	6.62258	.011*
Value of Group	0.01143	.915
Anxiety Toward Group	1.30441	.256

*Significant at the .05 level.

A t-test analysis for the variables Perception of the Writing Teacher and Involvement in Group revealed that the treatment group had a higher mean score on both scales (Table 4.13).

Table 4.13--G
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Variable

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Table 4.13--Group comparisons in Perception of the Writing Teacher and Involvement in Group scales.

Variable	Treatment Group			Control Group			Mean Diff.
	N	Mean	S.D.	N	Mean	S.D.	
Perception of the Writing Teacher	30	27.8	3.1	89	24.1	5.3	+3.7
Involvement in Group	30	25.6	3.9	89	23.5	3.9	+2.1

Gain scores were computed on the writing and group work attitudes of students in the treatment group (Table 4.14) and the control group (Table 4.15). For the treatment group, the highest gain score was on the scale Perception of the Writing Teacher (+4.2). All scales for the treatment group showed positive gains. The negative gain scores on the Anxiety scales indicate a lessening in anxiety and therefore represent positive outcomes.

For the control group, the highest gain score was for the scale Self-concept in Writing (+.4). When the gain scores of the two groups were compared, the control group received higher scores in two scales: Anxiety Toward Group (-.2) and Value of Group (+.3). The treatment group received higher gain scores in the remaining seven attitudinal scales.

Table 4.14.-

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Table 4.14.--Comparison of pre- and posttest attitudes toward writing and group work for the treatment group.

Variable	Pretest		Posttest		Gain
	Mean	S.D.	Mean	S.D.	
<u>Writing Attitudes</u>					
Perception of the Writing Teacher	23.6	2.7	27.8	3.1	+4.2
Anxiety Toward Writing	17.9	3.8	16.5	4.0	-1.4
Value of Writing in Society	26.6	3.0	27.8	2.6	+1.2
Self-concept in Writing	21.0	3.0	22.7	3.6	+1.7
Enjoyment of Writing	20.4	2.6	21.7	3.2	+1.3
Motivation for Writing	19.2	2.9	20.4	3.4	+1.2
<u>Group Work Attitudes</u>					
Involvement in Group	23.8	4.0	25.6	3.9	+1.8
Value of Group	6.9	1.1	7.0	1.0	+ .1
Anxiety Toward Group	3.4	1.2	3.3	1.1	- .1

Table 4.15.--Comparison of pre- and posttest attitudes toward writing and group work for the control group.

Variable	Pretest		Posttest		Gain
	Mean	S.D.	Mean	S.D.	
<u>Writing Attitudes</u>					
Perception of the Writing Teacher	24.4	3.9	24.1	5.3	- .3
Anxiety Toward Writing	16.8	3.7	16.7	3.6	- .1
Value of Writing in Society	27.0	2.9	26.8	3.2	- .2
Self-concept in Writing	22.6	3.7	23.0	3.5	+ .4
Enjoyment of Writing	21.0	3.4	21.3	3.5	+ .3
Motivation for Writing	20.2	3.4	20.2	3.4	.0
<u>Group Work Attitudes</u>					
Involvement in Group	23.2	4.0	23.5	3.9	+ .3
Value of Group	6.7	1.1	7.0	1.0	+ .3
Anxiety Toward Group	3.8	1.4	3.6	1.3	- .2

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Research Question 1 asked whether students who experienced heterogeneous cooperative learning groups differed from those who experienced traditional instruction in attitudes toward writing and group work. The null hypothesis was rejected.

Achievement Gain

The second research question was, "Do students who experience heterogeneous cooperative learning groups differ from those who experience traditional instruction in achievement in business writing skill as assessed by a post-measure of business letter writing?"

Ho 2: There is no difference in business writing achievement of students participating in heterogeneous cooperative learning group instruction and traditional instruction.

A t-test was used to determine whether the posttest means differed. The t-test indicated that statistical significance was not present (Table 4.16). Therefore, Hypothesis 2 was not rejected. There was no difference in business writing achievement of students participating in heterogeneous cooperative learning group instruction and traditional instruction. The mean for the treatment group was 14.5, and the mean for the control group was 14.6.

Table 4.16.--Achievement as determined by the posttest business writing assessment.

Measure	Treatment Group			Control Group			Mean Diff.	t- Value	Sig.
	N	Mean	S.D.	N	Mean	S.D.			
Postwriting	30	14.5	4.3	89	14.6	4.2	-0.1	-0.07	0.945

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Table 4.17.

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Although writing achievement was no greater for the treatment group than for the control group, both groups showed a significant gain in achievement (Table 4.17). Paired t-tests revealed a six-point gain for both the treatment and control groups.

Table 4.17.--Gains in achievement from prewriting to postwriting.

Variable	N	Mean	S.D.	Difference in Mean	t- Value	p
<u>Combined Groups</u>						
Prewriting	119	8.7017	3.570	5.8613	17.97	.000*
Postwriting		14.5630	4.193			
<u>Treatment</u>						
Prewriting	30	8.5500	3.185	5.9667	9.62	.000*
Postwriting		14.5167	4.252			
<u>Control</u>						
Prewriting	89	8.7528	3.706	5.8258	15.14	.000*
Postwriting		14.5787	4.197			

*Significant at the .05 level.

Research Question 2 asked whether students who experience heterogeneous cooperative learning groups differed from those who experienced traditional instruction in achievement in business writing skill as assessed by a post-measure of business letter writing. There was no significant difference in achievement between the groups; therefore, the null hypothesis was not rejected. However,

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the data revealed that both treatment and control groups made significant gains in writing achievement.

Relationship of Pre-course Ability
and Attitude Measures to Achievement

The third research question was, "Is business writing skill, as measured by a posttest writing assignment, related to pre-course ability (ACT scores, English 112 or equivalent, high school GPA, pretest writing assignment, and pre-course attitudes (toward writing and group work))?

Ho 3: There is no relationship between posttest writing achievement and pre-course ability and pre-course attitudes.

Step-wise multiple regression was used to determine the relative influence of the pretest measures on final achievement. The relationship between the final writing assignment grade and the independent variables (English 112 or equivalent, ACT scores, high school GPA, pretest writing assignment, and pre-course attitude measures) reached .62650 (Table 4.18). The .05 alpha level of significance was used to assess the contribution of the predictors. Three variables were found that predicted 39.3% of writing achievement: Prewriting, ACT English, and Pregroup Value. Therefore, Hypothesis 3 was rejected. There was a relationship between posttest writing achievement and pre-course ability and pre-course attitudes.

Table 4.18.-

Step No.	Variable Entered
1	Prewr
2	ACT E
3	Value

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Table 4.18.--Prediction of writing achievement using ability and attitude measures.

Step No.	Variable Entered	Multiple R	Multiple R Sq.	Increase in R Sq.	F at Step
1	Prewriting	.56633	.32073	.24560	47.68883*
2	ACT English	.60239	.36287	.23952	28.47734*
3	Value of Group	.62650	.39250	.23400	21.32124*

*Significant at the .05 level.

The variables ACT Mathematics, ACT Social Science, ACT Natural Science, high school GPA, English 112, Perception of the Writing Teacher, Anxiety Toward Writing, Value of Writing, Self-concept in Writing, Enjoyment of Writing, Motivation for Writing, Involvement in Group, and Anxiety Toward Group did not appear in the prediction equation. Of particular interest is that English 112, which is a prerequisite for Business Communication II, was not a predictor of business writing skill.

Through the use of the SPSSx statistical package, a prediction equation was evolved that combined ability and attitudes to predict business writing skill.

$$\text{Predicted achievement} = (\text{Prewriting} \times .528842) + (\text{ACT English} \times .195225) + (\text{Pregroup Value} \times -.644556) + 11.114156$$

The negative coefficient for Value of Group suggests that those students who value group work the least do better in writing.

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Effectiveness of Heterogeneous Cooperative Learning Groups

The fourth research question was, "Do students who experience heterogeneous cooperative learning groups report, through written comments, favorable final evaluations?"

To assess the effectiveness of the cooperative learning groups, qualitative data were gathered through content analysis of students' weekly summaries and final course evaluation. These evaluation instruments were entitled Cooperative Learning Groups Observation Sheet, Cooperative Learning Groups Self-evaluation Checklist, Cooperative Learning Groups Evaluation Sheet, and Group Work Evaluation. A summary of the content of each of these evaluation instruments follows.

Cooperative Learning Groups Observation Sheet

The treatment group was organized into ten heterogeneous cooperative learning groups of three students each. After working together as a group for four weeks, students began processing, through weekly evaluations, their effectiveness in working together. In the first evaluation, students commented on ways in which group members encouraged others to participate, explained concepts and principles, expressed support, gave directions, asked for information, and paraphrased ideas and concepts.

Encourages others to participate. Students in six of the ten groups reported that all group members encouraged others to participate. Sample responses included:

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"She always participates in group discussion and is always encouraging input from others during decision making."

"He always is an upbeat person and encourages others to motivate and get thinking. He always wants others participating within our group."

"[She is] very helpful and asks others to add what they feel the situation needs. Whenever we are criticizing one another's papers she always asks us what we think would work the best."

The remaining groups reported a lesser degree of encouragement from all of the group members. Those students identified as being "shy" seemed to offer little, if any, encouragement to others.

"Since she is shy she has trouble getting going. But when she does she is very good."

"Well to be quite honest, he really doesn't contribute much. He really only talks when he wants something like for us to proofread his paper and he does not ask for our opinions. He just expects us to fix his mistakes."

Sometimes an individual within a group was evaluated differently by the other group members. For example:

"He tried to encourage but he is shy to talk. I don't think he ever did."

In contrast to--

"He usually encouraged us to participate writing our letters."

or

"There really isn't any reason to encourage our group members to participate. I think we work well as a group."

In contrast to--

"I believe that not one of us supported encouragement to our potential."

By reviewing these comments, the instructor could identify potential areas of conflict within the group. For cooperative

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learning groups to be effective, members must be encouraged to resolve their conflicts (Johnson et al., 1988).

Explains concepts and principles. An important function of cooperative learning groups is to ensure that each member understands the task to be performed or the concept to be understood. Part of the instructor's role is to relinquish "control" and to encourage students to be responsible for the learning (Johnson et al., 1988). Comments indicate that students turned to their group for information on assignments, clarification, lecture notes, and so on. Sample comments support these activities:

"She usually knows what is going on, so she is very helpful. If we don't understand an assignment, she will explain to the best of her capability to let us understand also."

"If anyone has a question about our homework, all of us try to give our input about how we conceive the assignment."

"I feel that as a group we explain things. We all seem to get different parts of things and then put what we know together for all of us."

Only two negative comments were offered:

"Most of the time he says he doesn't understand what is going on."

"He does not explain concepts usually. He is absent often and is usually the one asking instead of the one explaining."

Additional comments indicated that the groups were working effectively in explaining concepts and principles.

Expresses support. Expressing support for group members is important in building a cooperative spirit within the team (Johnson et al., 1988). The interdependence among group members, often in the form of shared grades, made it important that group members felt

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comfortable with each other--and supported. Representative comments included:

"He supports our ideas and our grades. If we get a good grade, he compliments us. If we get a bad grade, he tries to figure out why!"

"She gives support throughout any of our assignments and helps build our confidence in our writing skills."

"He expresses his support with a sense of security. He wants us to feel secure in the group, so that the group will participate and feel free to work as a team."

"The support for the group is there even though there is no real sign. We know we can rely on each other."

"She was always quick with words of encouragement. 'Good job,' 'Better luck next time,' etc. She helped develop the group spirit."

"During our final project he said, 'We have three good heads.' I thought that showed a lot of support for all of us."

Students participating in these groups seemed sensitive to each other and regularly offered expressions of support.

Gives directions. The roles of facilitator, recorder, and processor were rotated within the group each week. Each member had the opportunity to fulfill each role. In general, group members were pleased with the leadership in each group. In some cases the members "blossomed" with the leadership role. Sample comments included:

"When he is the leader, he does a fine job in explaining. He will inform us what should be done and what order to have it done."

"If she is the group leader that day, she will give us very good directions on the subject we are working on."

"She does give directions when she is the leader but sometimes she tends to be quiet."

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Asks for information, rationale. An effective cooperative learning group is one in which trust has been established among its members (Johnson et al., 1988). Feeling free to ask for information or explain a rationale depends on the degree of trust that has been established by members of the group. Asking for information was especially important for students with English as a second language:

"If he had questions, he could come to me for answers. For example, when he didn't know what a paper shredder was or draperies, I would explain the best I could."

Other comments suggesting that trust was being developed and that asking for information or rationale was acceptable included:

"He is willing to ask for information about what to do and is willing to use our responses."

"He asks for information when he misses class. He wants to know what he has missed so he can make it up. Asks a lot of questions."

"[She] was quick to ask for assistance; never wanted the work of the group to be decreased by her own work. She, of us all, asked for the most help and assistance. It was never 'too much' as to cause problems."

Although group members felt comfortable in asking for information, they sometimes were hesitant to use the suggestions:

"He does ask for information sometimes, but many times he thinks what he's done is perfect, when it's not!"

"We have had our disagreements on what we feel is right or wrong, and as a group we try to ration things out."

In general, students developed a feeling of trust within the group and asked for information and clarification of assigned task. This feeling of trust grew as the term progressed.

Paraphrases. Students were asked to comment on others' ability to paraphrase or restate a problem or task to clarify meaning.

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Those students identified as able to explain concepts and principles were often those identified as being able to paraphrase the best.

"He had a tendency to give an example if there was something I didn't understand. It really helped."

"I usually understand what she is trying to say if she's explaining something or pointing out mistakes in my work. It's easy to understand her."

"He helps the group understand things that we don't understand by giving additional information to let us know what is going on."

"Thank God she does! She helps me understand assignments. Sometimes I don't even have to ask; she must see the confusion."

Fewer instances of paraphrasing were observed by the students than any other category in this evaluation.

Awareness of group members. Several comments appeared in this evaluation that suggested group members were attempting to analyze each other and to understand each other's behavior.

"Only when directly asked would she [explain concepts], but she tried her best when called upon. She seemed intimidated by us but I can't be sure."

"I think she is a shy and subdued person who finds it difficult to get chummy with people she hardly knows."

"He is very supportive and asks us what we're doing to make us feel more together as a group."

"None of our participation potentials were reached; all of us are at fault."

"She was having problems with her sorority, and I think she was a little preoccupied with breaking up [her boyfriend was always bugging her before class]."

"As leader of the group, she did an excellent job of motivating but fell short a few times when explicit directions or judgments needed to be made."

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Throughout the quarter, students became more familiar with each other's personal as well as academic lives. The times spent "off task" provided the opportunity for student interaction and sharing.

Summary. The Cooperative Learning Groups Observation Sheet provided a means to evaluate the initial effectiveness of the heterogeneous cooperative learning groups. As problem areas were identified, the instructor intervened by discussing the situation with group members and asking the group to resolve the problem. In general, the groups developed a feeling of trust and cooperation with each other, group members felt free to ask for directions and explanations, and group members encouraged and supported each other.

Cooperative Learning Groups Self-evaluation Checklist

The second evaluation instrument administered was a self-evaluation of the extent to which a group member cooperated within his/her group. Students were asked to respond to items on a five-point scale: 5 = always, 4 = almost always, 3 = sometimes, 2 = almost never, and 1 = never. The items and their corresponding means are rank ordered in Table 4.19.

Table 4.19.

Item

I am interested in the group

I include our work and

I contribute and inform

I ask others for ideas and

I ask for help when I need it

I make suggestions to my group
the writing of the project

I help others with their work

I summarize and inform

I keep track of the task

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Table 4.19.--Rank order of items students used to evaluate cooperation with the group.

Item	(1) Never	(2) Almost Never	(3) Sometimes	(4) Almost Always	(5) Always	Mean
I am interested in the group succeeding	---	---	---	13%	87%	4.7
I include everyone in our work and discussion	---	---	17%	20%	63%	4.5
I contribute my ideas and information	---	---	13%	33%	53%	4.4
I ask others for their ideas and information	---	3%	27%	20%	50%	4.2
I ask for help when I need it	---	---	23%	30%	47%	4.2
I make sure everyone in my group understands the writing assignment or project	---	---	33%	27%	40%	4.1
I help other members of my group learn	---	3%	30%	40%	27%	3.9
I summarize our ideas and information	---	3%	40%	40%	17%	3.7
I keep the group on task	---	---	37%	47%	17%	3.4

Students rated themselves highest in the areas of being interested in the group succeeding, including everyone in work and discussion, contributing ideas and information, and asking others for their ideas and information. Students rated themselves lowest

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in areas that required leadership skills, such as keeping the group on task, summarizing ideas, and helping other group members learn.

Cooperative Learning Groups Evaluation Sheet

In the third evaluation instrument, students were asked to record daily group activities for one week (four class periods). Of the 29 journals reviewed, 28 indicated the growing effectiveness of their group work and increasing skill development. The following examples illustrate how three students from different groups reported on the week's activity.

Student A:

- Day 1: "This group works real well together. We are still a little timid in editing others' work, but that should improve as we know each other better."
- Day 2: "Wow, what a difference! Today each member really came out and said if they thought something was wrong. I see improvement every day. Still working well together."
- Day 3: "I don't think we could really put our heads together and come up with buffers. We weren't too assertive on suggestions, but we all have those days."
- Day 4: "We have some problems coming up with buffers in the indirect letters. The rest of the letter came somewhat easy. Our editing skills are getting better each time."

Student B:

- Day 1: "Wow, what an experience!"
- Day 2: "It's semi-working."
- Day 3: "Things working OK."
- Day 4: "Today we finally seemed to click."

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Student C:

- Day 1: "We edited individuals' letters and checked for misspelled words. It is effective to work as a group because some misspelled words were unnoticed, but as soon as the group read the letters, they noticed such words and had to be corrected."
- Day 2: "Working as a group helps a lot. It helps one to be careful of minor things which are overlooked. It helps one to know how to edit and spell words correctly. By being told to correct something in your letter by the members makes one not forget anymore."
- Day 3: "We edited individuals' letters in the group. There were various kinds of mistakes made by each and everyone of us, so we corrected our papers, each person pointing out what he recognizes as a mistake made by the other members and we unanimously agreed upon the correction."
- Day 4: "Our group worked on an indirect letter, each member of the group coming up with a paragraph suitable to the assigned letter. The buffer was the most difficult paragraph, so we worked together making different suggestions until one came up with what we thought was right and hence adopted it."

Only one student expressed frustration with her group. This frustration developed because of the lack of leadership skills on the part of the group facilitator and the lack of assertiveness on her part.

- Day 1: "I sat, not saying anything, waiting for the leader to start things going. Nothing was said until I reminded him, Adam [the leader today]. I don't think he likes the class or writing letters; he mumbles under his breath about what we are supposed to be doing. Bob doesn't say much. It's frustrating for me to work in this group. I don't want to come across as 'knowing it all.' I really would like to be of help to my group but it is hard for me to be aggressive with these two boys."
- Day 2: "Again, today, I waited for the group to get started. I reminded Adam that he had to lead the group. It took a good part of the class time for them to compose their letters so we didn't get much time to check them over

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together. Bob doesn't say much. Adam mumbles about not knowing what we are supposed to do, and I get frustrated and don't care to say much."

Day 3: "Group went O.K. Adam was absent. Bob led and we discussed our assignment."

Day 4: "Adam was present but said he didn't know much about the inductive approach so he didn't say much. Bob and I went over the assignments. Then we wrote our class assignment. But things always move very slow in our group, which frustrated me. I don't like to have to remind the leader it is his turn to lead. It's hard for me to be aggressive with my group members to keep things going."

Although the frustration for this student never disappeared, she did receive satisfaction from the group members' appreciative comments about her contribution to the group.

Group Work Evaluation

The final evaluation instrument was designed to provide an overall measure of the effectiveness of the heterogeneous cooperative learning groups. Students generally expressed a positive attitude toward learning to write business letters through groups. Two students recognized the need to be able to work in groups but preferred to work individually.

Representative comments are provided for each question on the final evaluation:

1. In what ways do you feel group work helped improve your writing?

"I think that it made me more confident about myself and my writing skills. I finally figured out how to use commas and semicolons. The people I worked with made it easier to write."

"[Groups] helped me be more self-critical of my own writing style. Several times I would put down words and phrases that my group members would not understand. After a while I

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would begin to write in a clear and concise manner in which I could easily be understood."

"Working in groups was a benefit because there were different points of view presented. To get a better understanding of an assignment, one can freely ask others in the group."

"Group work improved my writing because at times I had different input and I had to pick between which one was better."

"Criticism, pat on the back."

"Having other people read my writing and give constructive criticism allowed me to see where I was making most of my mistakes; I was then able to correct them."

"Group work has helped me to a great extent. When you learn how to work in groups, you get a better understanding of how much you have to work as a team to succeed in the business world."

"Group work helped improve my writing in such a way that when there was [sic] mistakes as to the content or grammar the members helped me see what was wrong with it, and if I still didn't understand then they kept at it till I did."

2. In what ways do you feel group work is ineffective?

"A group is ineffective if one or more members do not really want to work as a group. Everyone has to have the proper attitude to work in a group if they want to be effective and really learn from it."

"Group work may be ineffective when not all members participate or go to class, because you are dependent upon that person's help."

"Group work is ineffective if one of the group members is not prepared for the class. [Didn't do homework.]"

"Sometimes one of the members will get into a conflict when ideas weren't liked."

"Closed minds."

"Group work is ineffective when the members are not in the same level of understanding and when they are reserved people; e.g., those members who are having problems in doing assigned work never comment on other team members' work because they think they are correct. The same thing applies when somebody is

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reserved; he/she prefers to talk little and it does not help the group."

3. Do you think the instructor's group grading practices are fair? (Note: None of the responding students thought the grading was unfair.)

"I do think it's fair for the instructor to grade as a group, because it makes every person put out more effort on their work."

"Yes. The system you set up was mathematically sound. It gave a fair shake to everyone. Sometimes it irked me but overall it was good."

"Yes, because it is not as easy to let things go as much when you know that someone else's grade depends on you and the purpose was to work in groups and that means getting everyone to participate."

4. Would you rather work in groups or individually? (Note: 68% = groups; 21% = both groups and individually; 10% = individually only.)

"Sometimes I would rather work in groups and sometimes I would rather work individually. I think it just depends on what kind of an assignment you are doing. Most of the time I would like to work by myself because I have a hard time talking to people I don't know."

"I, personally, would rather work in groups. In groups you have different minds to work with. All of you have a different idea and that can make a good outcome."

"Despite all the problems groups may cause, I know I've learned so much more than I would have if I would have had to write individually."

"When working in a group will put synergism into action, then I'd rather work in a group. But when the group is holding me down rather than boosting me up I'd rather go solo."

"Groups because then I don't have to do all the thinking."

"I prefer to work individually because it helps me to be independent instead of relying on the group members who might give me wrong advice since they both agreed upon it and I myself will be inclined to accept."

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"I would rather work in groups. When you work in groups, you get a better understanding of how a group functions. However, there are some things that you have to work on individually."

5. What have you learned about working as a team?

"Everyone should always be involved, and try to participate as equally as everyone else does. It has its advantages; you have to have more than just one person's opinion, the other people might have good suggestions, they might talk more to help bring the group together."

"I don't talk that much, but it made me communicate my ideas more."

"It really is work and there has to be 100% cooperation from all members to be effective."

"That constructive criticism is O.K. and that it is very helpful when used effectively."

"It takes a lot of hard work . . . and a lot of patience. Sometimes it is not easy to give and take constructive criticism. I found it an enjoyable experience."

"It's a lot of give and take and so much more understanding than I have ever been used to. I've learned that if a person doesn't do their job, there may be a reason so try not to pass judgment too soon."

"That you can't always have everything your own way. You have to be able to listen to your group members and help one another out."

Response to Research Question

Students' comments were favorable toward cooperative learning groups in the learning of business writing. They recognized the importance of being able to work as a member of a team and to be responsible for the outcome. The realizations that involvement is necessary for a group to be successful, that working as a team has a lot of give and take, that there are times to work independently and

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times to work in groups, and that constructive criticism can be beneficial were all expressed by group members.

Further Exploration of Data

The prediction equation for achievement included a negative coefficient for Value of Group. Although the addition of this variable added only 3% to the prediction equation, the implications of this finding led to further exploration of the data. Of major concern was the negative relationship between a measurement of achievement and attitudes toward group work. Further inspection of the relationship between ability measures and the group work inventory seemed appropriate.

Six of the eight correlations between ability and Involvement in Group were negative (Table 4.20). Curiously, the correlation with mathematics represents a reversal in the otherwise dominant trend. Seven of the eight correlations in Anxiety Toward Group were significantly correlated with ability, suggesting that higher anxiety toward group is related to higher achievement.

The negative correlations between attitudes toward group work and achievement support the belief that schools encourage individualistic and competitive learning more than cooperative learning. This finding provides empirical evidence of the major assumption that generated this study.

Table 4.20

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Table 4.20.--Correlation coefficients for pretest group attitude variables and measures of ability for both groups.

Measure	N	Involvement In Group	Value of Group	Anxiety Toward Group
<u>ACT</u>				
English	103	-.2426*	.0321	.3084*
Mathematics	103	.2387*	-.0980	.3583*
Social Science	103	-.2102*	.0399	.2770*
Natural Science	103	-.1724*	.0824	.1907*
Composite	103	-.2687*	.0107	.3495*
High School GPA	119	-.1472	.0282	.2041*
English 112	119	.0086	.1626*	.0448
Prewriting	119	-.1744*	-.0383	.2438*

*Significant at the .05 level.

Summary

The effectiveness of heterogeneous cooperative learning groups in the teaching of business communication at the postsecondary level was evaluated in Chapter IV. Pretreatment analysis revealed that the treatment and control groups were similar; therefore, a comparison between instructional treatments could be investigated without covariates.

Hypothesis 1 was rejected after the results of MANOVA on post-test data indicated a significant difference in attitudes toward writing and group work between the treatment and control groups ($p = .010$).

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Hypothesis 2 was not rejected after the results of the t-test analysis of a final business letter indicated no statistical significance between the two groups ($p = .945$). Both the treatment and the control groups, however, did make significant gains in achievement in business writing.

Hypothesis 3 was rejected after the results of a step-wise multiple regression provided three predictors of writing achievement: Prewriting, ACT English, and Value of Group.

Hypothesis 4 provided qualitative information on the effectiveness of heterogeneous cooperative learning groups. Cooperative learning groups were especially effective in improving students' attitudes toward writing and group work.

The use of heterogeneous cooperative learning groups in the teaching of business communication at the postsecondary level is an effective alternative teaching strategy.

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CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study was designed to investigate the effectiveness of heterogeneous cooperative learning groups in the teaching of business communication at the postsecondary level. The sample consisted of students from four sections of Business Communication II offered during winter quarter, 1988-1989, at Ferris State University. The sample was organized into control and treatment groups. Both groups were guided by the goals and objectives for Business Communication II as established by the faculty in the Office Administration Program at Ferris State University.

Four research questions were examined in this study:

1. Do students who experience heterogeneous cooperative learning groups differ from those who experience traditional instruction in attitudes toward writing and group work as assessed by the Writing Attitude Inventory and the Group Work Attitude Inventory?
2. Do students who experience heterogeneous cooperative learning groups differ from those who experience traditional instruction in achievement in business writing skill as assessed by a post-measure of business letter writing?

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3. Is business writing skill, as measured by a posttest writing assignment, related to pre-course ability (ACT scores, English 112 or equivalent, high school grade point average, pretest writing assignment) and pre-course attitudes (toward writing and group work)?

4. Do students who experience heterogeneous cooperative learning groups report, through written comments, favorable final evaluations?

Literature

The literature reviewed focused on the use of peer groups and cooperative learning groups in secondary and postsecondary education. Group composition and grading methods were also reviewed.

A pretest-posttest design was used in 17 of the studies reviewed; field research methods were incorporated into two studies; a combination of English grades, overall GPA, sex, class level, and/or test scores were used to determine the effectiveness of peer or cooperative learning groups in three studies.

The findings of these studies varied. Of the 22 studies investigating gains in achievement, five found that gain to be significant at the .05 level. Of the 13 studies investigating gains in attitude, three studies indicated a significant gain. Most studies indicated a gain, but not at a significant level.

Two meta-analyses on heterogeneous grouping were reviewed, which represented 148 studies. The meta-analyses on heterogeneous

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grouping indicated that while there can be significant differences in achievement between students in cooperative learning groups and traditional classrooms, the greatest improvement occurs in the attitudes and interpersonal skills of students.

Methodology

The sample for this study consisted of 119 students enrolled in four sections of Business Communication II at Ferris State University during winter quarter, 1988-1989. The control group consisted of 89 students who received the traditional lecture-discussion method of teaching. The treatment group consisted of 30 students who participated in heterogeneous cooperative learning groups. Pretreatment analysis indicated that the two groups were similar in composition and pretest measurements.

The basic design was a nonequivalent control group design with pretesting and posttesting. The pretest ability measures included ACT scores, English 112 or equivalent, high school GPA, and pretest writing assignment. The pretest attitude measures were the Writing Attitude Inventory and the Group Work Attitude Inventory administered the first week of class.

The posttest ability measure was a final writing assignment administered the last week of class. The posttest attitude measures were the Writing Attitude Inventory and the Group Work Attitude Inventory.

Qualitative data were gathered through four instruments in which students evaluated their contributions to group work and the effectiveness of their groups.

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Research Question 1. MANOVA was used to test for significant differences between the treatment and control groups in attitudes toward writing and group work as measured by the posttest. The .05 alpha level was used.

Research Question 2. A t-test was used to determine whether the posttest means for writing achievement differed. The .05 alpha level was used.

Research Question 3. Step-wise multiple regression was used to determine the relative influence of the pretest measures on final achievement. The .05 alpha level was used to assess the contribution of the predictors.

Research Question 4. The students' periodic and final course evaluations were analyzed to identify the perceived strengths and weaknesses of heterogeneous cooperative learning groups.

Results

Research Question 1. The first research question concerned the differences in attitudes toward writing and group work between the control and treatment groups. Wilks' lambda had an F-value of 2.58987 and a probability of 0.010; therefore, Hypothesis 1 was rejected. There was a significant difference between the attitudes toward writing and group work of students participating in heterogeneous cooperative learning group instruction and traditional instruction.

Research Question 2. The second research question concerned the writing achievement gain between the control and treatment

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groups. Statistical significance was not present ($p = .945$); therefore, Hypothesis 2 was not rejected. There was no difference in business writing achievement of students participating in heterogeneous cooperative learning group instruction and traditional instruction.

Research Question 3. The third research question concerned the relationship of pre-course ability to achievement. The relationship between the final writing assignment grade to pre-course ability and pre-course attitude measures reached .62650. The .05 alpha level of significance was used to assess the contribution of the predictors. Three variables were found to predict 39.3% of writing achievement: Prewriting, ACT English, and Value of Group. Therefore, Hypothesis 3 was rejected. There was a relationship between posttest writing achievement and pre-course ability and pre-course attitudes.

Research Question 4. The fourth research question was answered by analyzing qualitative data gathered from students' evaluations of their group participation and the perceived effectiveness of their cooperative learning groups. Students' comments were favorable toward cooperative learning groups in the learning of business writing. Students recognized the importance of being able to work as a member of a team and to be responsible for the outcome.

Conclusions

Based on the reported findings, the following conclusions were drawn:

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1. The use of heterogeneous cooperative learning groups in the teaching of business communication at the postsecondary level was an effective alternative teaching strategy as evidenced by positive gains in attitude and achievement for the treatment group. Feedback from student evaluations and teacher observation supported this statement.

2. The achievement of students participating in heterogeneous cooperative learning groups was equal to the achievement of students experiencing the traditional lecture-discussion method of teaching. The gain was slightly higher for the treatment group (+6.0) than the control group (+5.8); however, it was not at a significant level. The change in instructional strategy did not negatively affect learning outcome.

3. Certain attitude measures of students who participated in heterogeneous cooperative learning groups were significantly higher than those of students who experienced the traditional lecture-discussion method of teaching. The significant variables were Perception of the Writing Teacher and Involvement in Group. It is possible that the attributes and attitudes of each of the three instructors involved in this study and the time of day those classes were scheduled may have affected the results. Using the cooperative learning group structure provided the instructor with the opportunity to interact with small groups of students in a manner that usually does not occur in a typical classroom situation. This student-teacher interaction may have developed more positive perceptions of the writing teacher. The small-group structure

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encouraged students to be participants and discussants during class periods. In addition, each group member had the responsibility for being a facilitator, a recorder, and a processor while the group worked on assigned projects. Thus, sharing ideas, exchanging opinions, and serving in various roles enabled students to become more involved in their group work.

4. Combined pre-course measures, such as a pretest writing assignment, ACT English score, and attitude toward the Value of Groups, may be used as a means for predicting achievement in business writing or for course sectioning. The availability of information concerning students and their abilities can assist faculty in designing meaningful course goals and objectives, as well as appropriate teaching strategies. Pre-course writing samples, for example, could help the instructor focus on areas needing special attention within the class. Organizing heterogeneous cooperative learning groups could be particularly beneficial for students who generally have difficulty interacting with other students or who need special assistance.

5. The prerequisite, English 112, was not as effective as other measures in predicting success in Business Communication II. The strongest predictor of writing achievement was a pretest writing assignment. A better method for determining whether or not a student has the necessary background for enrollment in Business Communication II may be to have a pre-course writing assessment in addition to the current prerequisite of English 112.

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6. In a cooperative learning situation, the teacher's role is to structure learning situations cooperatively and to relinquish "control" to the students. The loss of this teacher "control" was not detrimental to student achievement and was associated with heightened perception of the teacher. In addition, students developed a sense of responsibility for their own learning. Students' comments indicated that they accepted the responsibility for giving directions, providing guidance, and editing each other's work. Although some conflicts did occur, the students resolved these situations as a group. The students decided whether or not extra time was needed to complete projects and scheduled their own out-of-class meetings. They "controlled" the in- and out-of-class activities necessary to complete the task.

7. The Value of Group scale was designed to assess a student's view regarding the usefulness of group work activity. The negative coefficients for Value of Group in the prediction equation and the negative relationship between group work attitudes and measures of academic ability imply that students who value group work the least do better in writing. The emphasis on individual achievement rather than group achievement is prevalent throughout the American educational system. Educational researchers have identified the overuse and inappropriate use of individualistic and competitive learning in American schools (Johnson et al., 1988). It may be possible that the individualistic and competitive environment in the American educational system has cultivated this negative association with group activity and responsibility. Although it is important

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that one be able to work independently, the literature has suggested that employers want people who can work as members of a team and who possess cooperative skills. Educators should explore ways in which to enhance cooperative learning skills and improve academic achievement.

8. Cooperative learning groups provided an opportunity for students to work with one another in a way that created a "positive energy" within the classroom. The instructor observed men and women with varying abilities working together to accomplish a task and to share in the rewards. The classroom environment was lively and focused on accomplishing tasks by group members working together.

Recommendations

The following recommendations concern further research and educational practices.

1. This study should be replicated with other samples at Ferris State University and within a variety of other higher education settings to determine whether similar or different findings result.

2. Additional research is needed to explore the negative relationship between measures of group work attitude and academic achievement. A continued review of the teaching strategies incorporated into elementary, secondary, and postsecondary education is recommended to see if educators cultivate students to work independently at the exclusion of working in groups.

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3. The practice of using English 112 as a prerequisite to Business Communication II should be investigated to determine if more effective pre-course requirements are available.

4. The Group Work Attitude Inventory should be expanded to provide a comprehensive, effective assessment of the attribute. Additional research should be conducted using group work items in the item shell theory proposed by Haladyna et al. (1987).

5. Heterogeneous cooperative learning groups should be incorporated into the classroom setting by other instructors within the Office Administration Program in order to compare results and ideas. Students could benefit by having multiple opportunities to develop their cooperative skills within the educational setting.

6. Students' attitudes toward writing and group work should be studied further as a means of course sectioning and/or placement. Students identified as having negative attitudes could be placed in classrooms using heterogeneous cooperative learning groups. Students identified as having lower abilities could be placed in heterogeneous groups where the opportunity exists for interaction with more able students.

Summary of Study

This writer's intention was to evaluate the effectiveness of heterogeneous cooperative learning groups in the teaching of business communication at the postsecondary level. The use of this alternative teaching strategy was supported by the data collected and the evaluative comments from students.

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Reflections

The use of heterogeneous cooperative learning groups in the teaching of business communication at the postsecondary level was effective. At first, students approached this change in instructional format cautiously, but soon they became active participants. Comments from the students emphasized their satisfaction with a classroom environment organized around participation rather than the typical lecture-and-sometimes-discussion format. Recent data on Ferris State University freshmen revealed that they perceived themselves to be above average in sociability (Kowalkoski & Swartz, 1989). The use of cooperative learning groups capitalized on the students' social skills and used these social skills to assist learning.

Observations confirmed the students' acceptance of this learning strategy as they were involved in discussion and decision-making activities. The classroom was "lively" as students were involved in the completion of their tasks. Some students labeled as "shy" did become more assertive; some students labeled as "nonleaders" did a satisfactory job in facilitating their groups; some students with excellent high school GPAs struggled at first in the group setting but later became group participants. The last observation supported the premise that students' pre-college experiences were based on individualistic and competitive success, rather than group achievement.

Increasing references to "our," "we," and "us" were heard in student conversations. Absenteeism was not a problem. Intolerance

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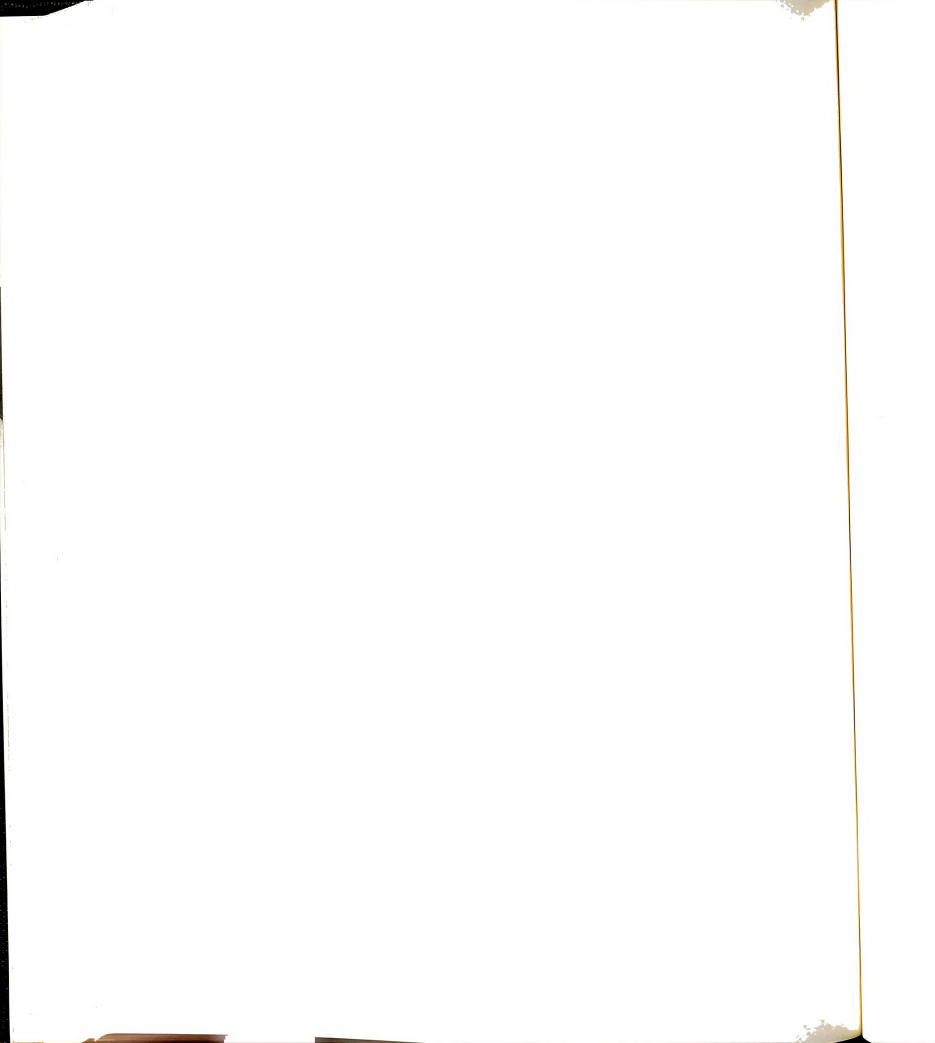
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of class absences seemed to build as students realized the necessity for all members to be present in order to complete a project.

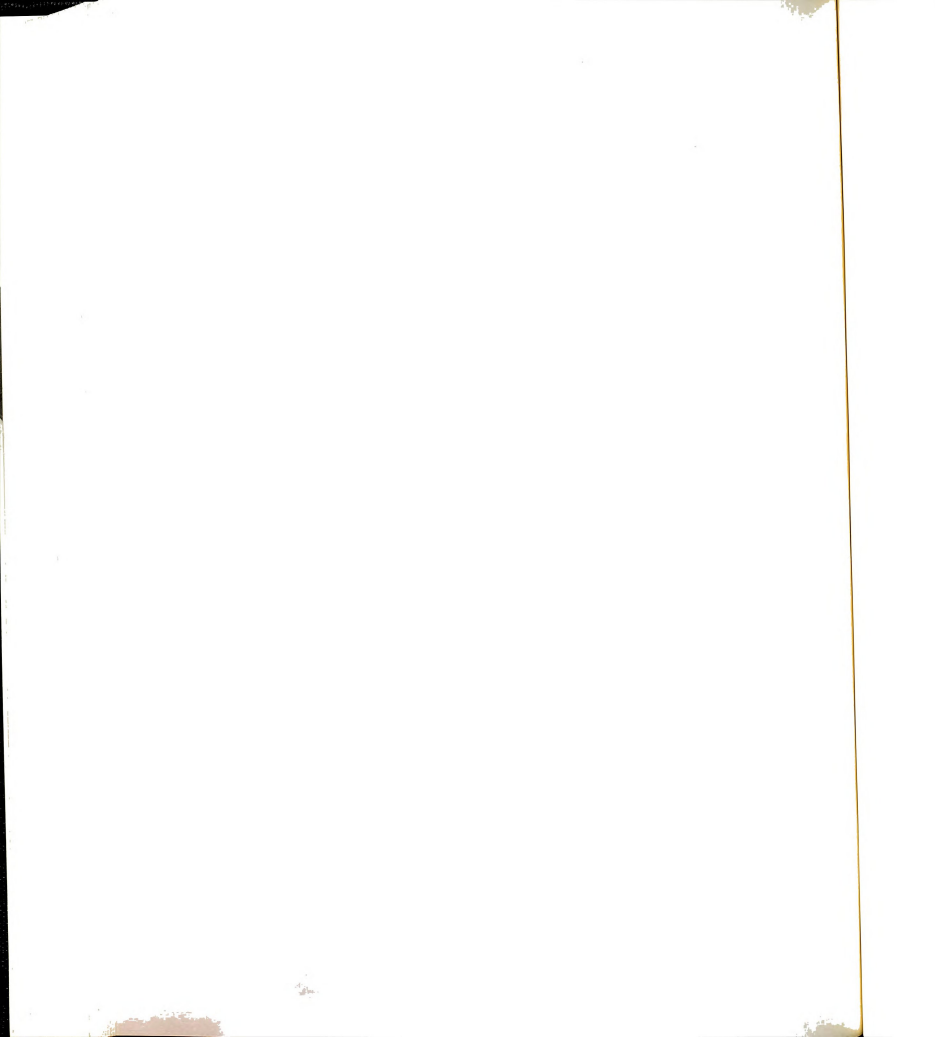
The cooperative learning groups were effective in providing students with feedback and suggestions for revision. In addition, these groups gave students the opportunity to "externalize" their thoughts and to develop their critical-thinking skills and decision-making abilities. Occasionally students could be heard integrating previously learned information and sharing personal work experiences in their group discussions.

The teacher had to learn to give up "control" of the classroom and to respond to various situations that were not always predictable. The teacher's role became one of managing the classroom environment, monitoring and intervening when necessary, and evaluating the process. The teacher was involved with the students and learned more about the "total" student than would be possible in a classroom where lecturing was the main method of presentation.

In the final analysis, cooperative learning groups brought together the academic, personal, and social skills of each student and provided an avenue for sharing in the learning process. Students did learn to write business documents and did learn to work in groups. Indeed, "three heads" were better than one.



APPENDICES



APPENDIX A

CONSENT FORM

Explanation

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CONSENT FORM
WRITING ATTITUDES INVENTORY AND STUDENT RECORDS

Explanation of Research:

This survey is being conducted as part of a doctoral study to investigate the effectiveness of cooperative learning groups in the teaching of Business Communication II at Ferris State University. The purpose of this segment of the study is to determine whether there are significant differences in attitudes between students participating in cooperative learning groups and students in traditional classroom settings. Students in four sections of OA 210 will be asked to participate voluntarily in this research. Students will be asked to complete the Writing Attitude Survey and to give permission for access to student records. All information will remain confidential and will be retained in the FSU Testing Office until after the end of winter quarter.

Today you will be asked to read 48 statements relating to writing, decide how you feel about the statements, and record your responses on a machine-scanned answer sheet. The survey will take approximately 20 minutes to complete. At the end of the quarter, student records will be used to determine if business writing skill is related to pre-course ability.

You are free not to participate at all or to withdraw your participation from the study at any time without recrimination. Your grade will not be affected by your decision. Professor Rose Ann Swartz will be the investigator for this study. The data gathered during winter quarter will not be seen by Professor Swartz until after the end of the term. All data will be maintained by the Testing Technician, Testing Office, Prakken Building, Ferris State University.

Consent to Participate:

I have been informed that this study is being conducted to investigate the effectiveness of cooperative learning groups in the teaching of Business Communication. The purposes and procedures of the study have been explained to me, and I voluntarily agree to participate in the research.

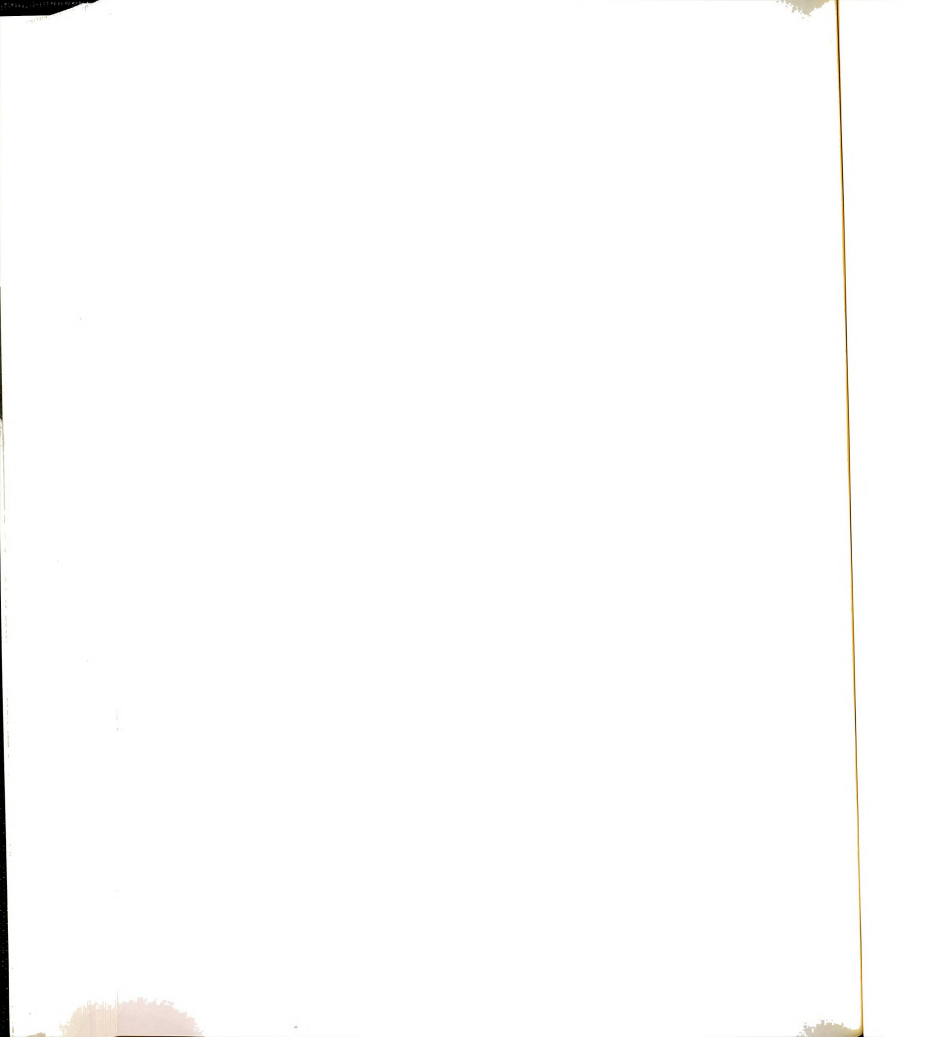
I understand that I am free to withdraw my participation at any time without recrimination.

I understand all information will remain completely confidential and that the results of the study will be available to me upon request.

Name (please print) _____

Signature _____

Date _____



APPENDIX B

WRITING ATTITUDE INVENTORY

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WRITING ATTITUDE INVENTORY

Directions: The following statements are about the study of writing. Please read each statement carefully and decide whether it describes the way you feel about writing. Then, find the number of the statement on the answer sheet, and blacken one of the spaces according to the following directions:

If you strongly agree with the statement, blacken space 1.

If you agree with the statement, blacken space 2.

If you disagree with the statement, blacken space 3.

If you strongly disagree with the statement, blacken space 4.

Use a No. 2 pencil. Be sure to blacken only one space for each statement. Mark your answers only on the answer sheet. Please do not write on this form.

Be sure to answer every question. You will have about 20 minutes to complete the 48 statements of the inventory. Remember to answer each statement according to the way you feel at the present time.

1. Writing is useful for the problems of everyday life.
2. Writing is something which I enjoy very much.
3. I like the easy writing assignments best.
4. I don't do very well in writing.
5. My writing teacher shows little interest in the students.
6. Doing writing assignments is fun.
7. I feel at ease in a writing class.
8. I would like to write outside of school.
9. There is little need for writing in most jobs.
10. Writing is easy for me.
11. When I hear the word "writing," I have a feeling of dislike.
12. Most people should have some writing classes.
13. I would like to write less in school.

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(Writing Attitude Inventory)

14. I read other writers' work to improve my writing.
15. Writing is helpful in understanding today's world.
16. I usually understand what we are talking about in writing class.
17. My writing teacher makes writing interesting.
18. I don't like anything about writing.
19. No matter how hard I try, I cannot learn to write well.
20. I feel tense when someone talks to me about writing.
21. My writing teacher presents material in a clear way.
22. I often think, "I can't do it," when a writing assignment seems hard.
23. Writing is of great importance to a country's development.
24. It is important to know how to write in order to get a good job.
25. It doesn't disturb me to do writing assignments.
26. I would like a job where I won't have to write.
27. My writing teacher knows when we are having trouble with our work.
28. I enjoy talking to other people about writing.
29. I like to play games that use words.
30. I am good at doing writing assignments.
31. My writing teacher doesn't seem to enjoy teaching writing.
32. Sometimes I do more writing than is assigned in class.
33. You can get along perfectly well in everyday life without writing.
34. Working with words upsets me.
35. I remember most of the things I learn in writing class.
36. It makes me nervous to even think about writing.

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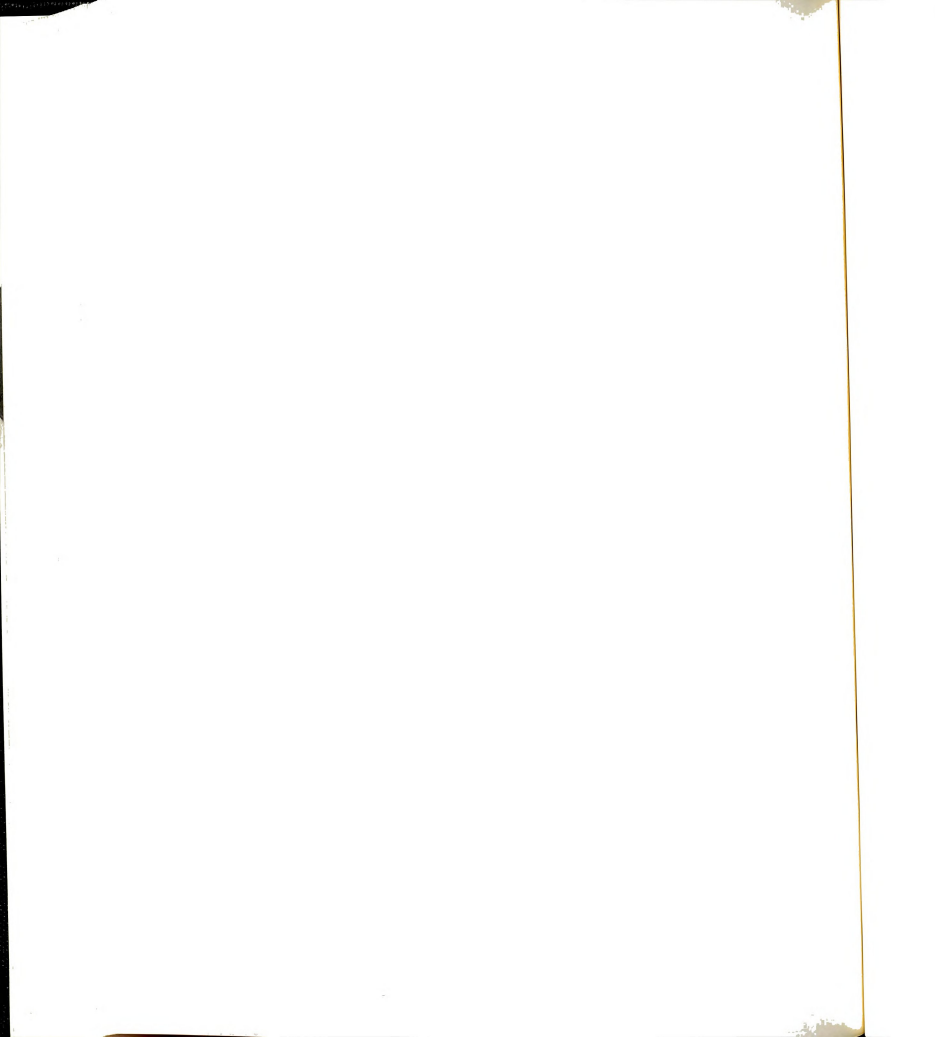
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(Writing Attitude Inventory)

- 37. I would rather have someone tell me how to write something rather than have to figure it out for myself.
- 38. Most of what I learned about writing isn't very useful.
- 39. It scares me to have to take writing class.
- 40. My writing teacher is willing to give us individual help.
- 41. I take writing classes only because I have to.
- 42. It is important to me to understand the work I do in writing class.
- 43. I have a good feeling about writing.
- 44. My writing teacher knows a lot about writing.
- 45. Writing is more of a game than it is hard work.
- 46. My writing teacher doesn't like students to ask questions.
- 47. I have a real desire to learn to write.
- 48. If I don't see how to do a writing assignment right away, I never get it.



APPENDIX C

GROUP WORK ATTITUDE INVENTORY

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GROUP WORK ATTITUDE INVENTORY

Directions: The following statements are about group work. Please read each statement carefully and decide whether it describes the way you feel about working in groups. Then, find the number of the statement on the answer sheet, and blacken one of the spaces according to the following directions:

If you strongly agree with the statement, blacken space 1.

If you agree with the statement, blacken space 2.

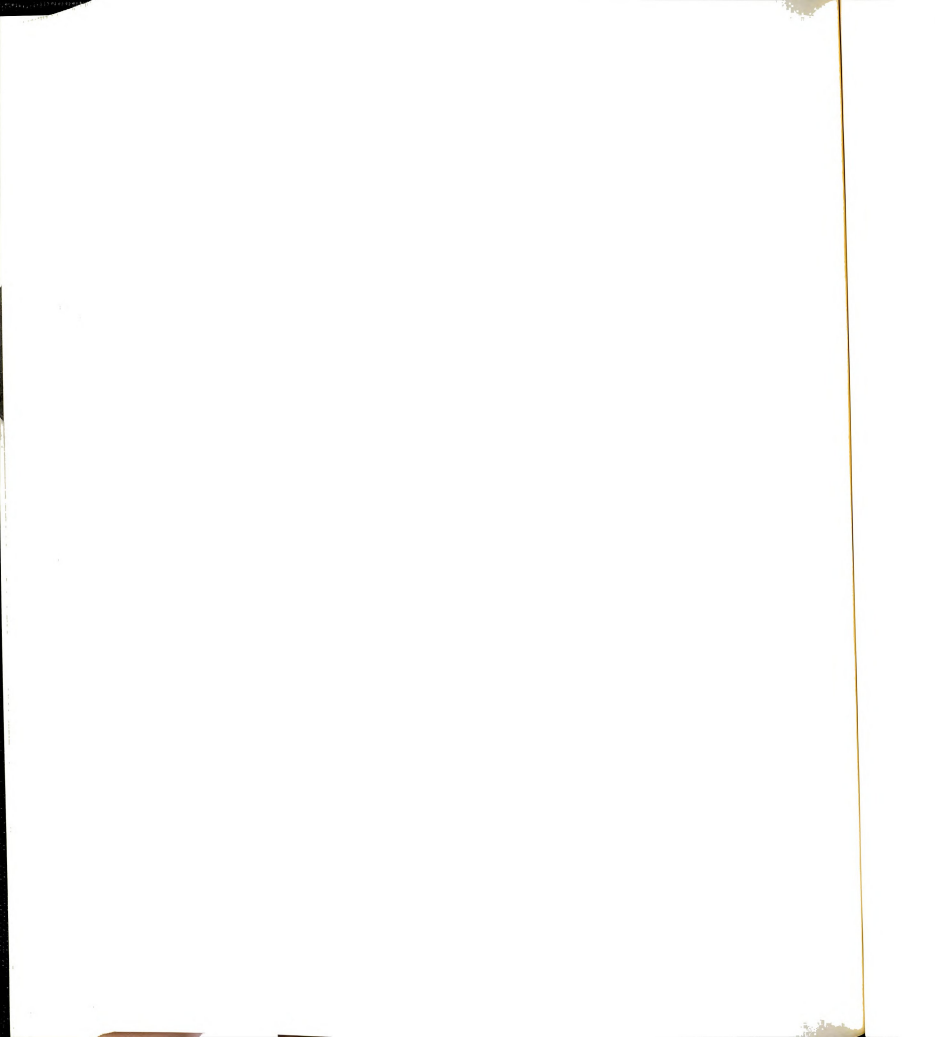
If you disagree with the statement, blacken space 3.

If you strongly disagree with the statement, blacken space 4.

Use a No. 2 pencil. Be sure to blacken only one space for each statement. Mark your answers only on the answer sheet. Please do not write on this form.

Be sure to answer every question. You will have about 5 minutes to complete the 12 statements of the inventory. Remember to answer each statement according to the way you feel at the present time.

1. Working in groups is something which I enjoy very much.
2. Doing group assignments is fun.
3. Group leaders make teamwork interesting.
4. No matter how hard I try, I cannot learn to work well in groups.
5. Teamwork is of great importance to success in business.
6. It is important to know how to work in teams in order to get a good job.
7. It doesn't disturb me to participate in group assignments.
8. I am good at doing teamwork assignments.
9. It scares me to work in groups.
10. Team members are willing to give me individual help.
11. I do group projects only because I have to.
12. I have a real desire to learn to work in groups.



APPENDIX D

PRE- AND POSTTEST WRITING ASSIGNMENT

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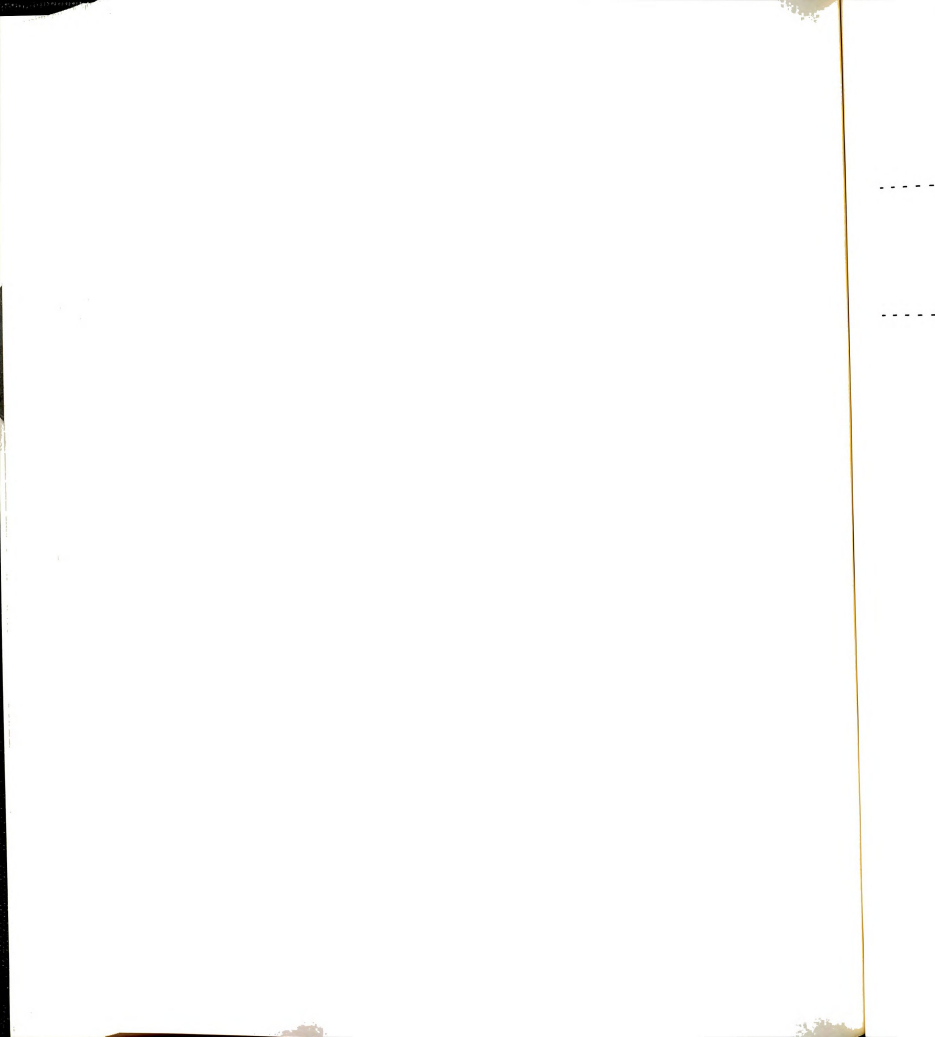
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WRITING ASSIGNMENT*

You are the personnel director for ABC Products, Inc. in Big Rapids. For certain types of training, you encourage employees to enroll in night classes at Ferris State University. For students who earn an A, the firm pays 100 percent of the tuition; for a B, 75 percent;; for a C, 50 percent. For lower grades, no reimbursement is allowed. One of your employees, Bill White, has completed a course and written a letter requesting full reimbursement. His grade was a C. Write a letter to Bill that explains and refuses. Supply needed addresses; use modified block style with mixed punctuation.

NOTE: Please do not sign your name. Write your student identification number in the upper right-hand corner of the letterhead provided.

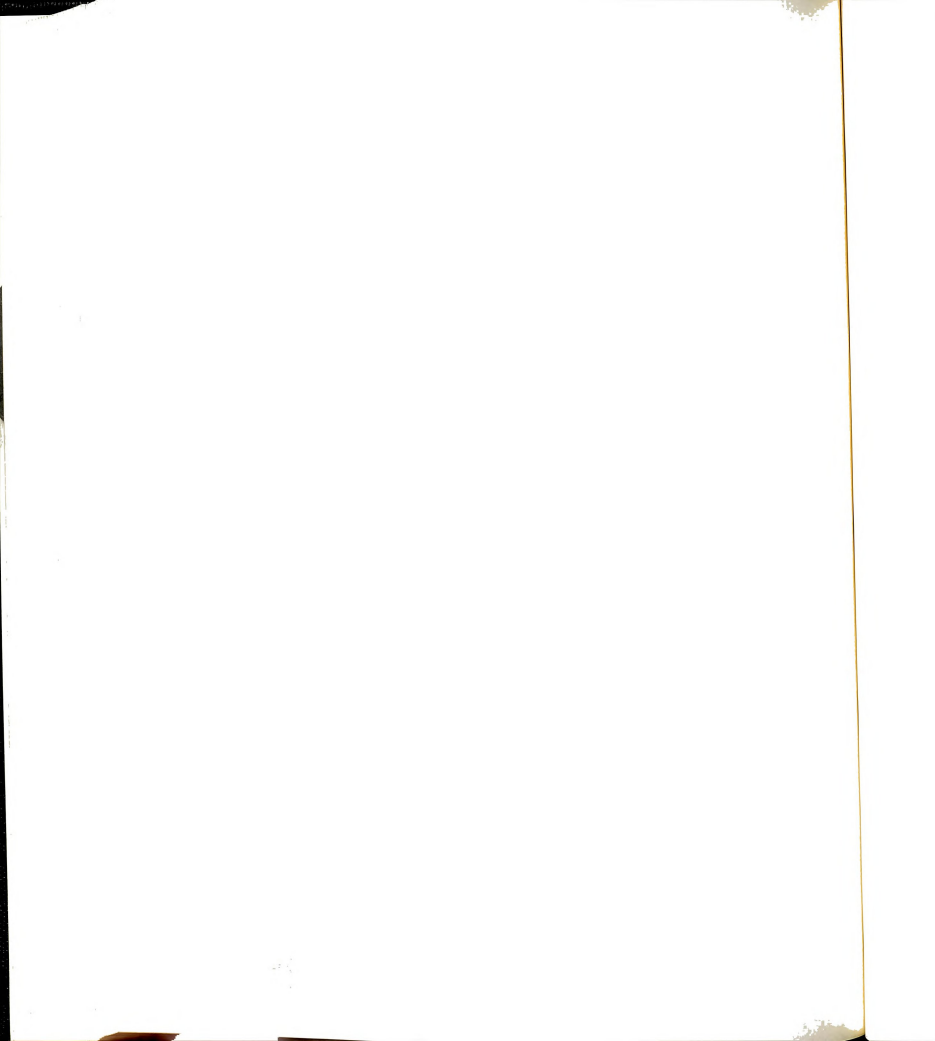
*Adapted from Himstreet and Baty (1984).



Student No. _____

A B C P R O D U C T S , I N C .

109 Hampton Avenue
Big Rapids, MI 49307
(616) 796-5555



APPENDIX E

OA 210 EVALUATION FORM

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OA 210 EVALUATION FORM

Rater's Initials: _____ Student ID: _____

Code: _____

I. TASK

Response to Situation	-2	-1	-0	_____
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II. GENERAL MERIT

Buffer	-2	-1	-0	
Details	-2	-1	-0	
Decision	-2	-1	-0	
Close	-2	-1	-0	
Tone	-2	-1	-0	
Word Choice	-2	-1	-0	_____

III. FORMAT

No Date	-1	-0	
No Inside Address	-1	-0	
No Signature Block	-1	-0	
No/Incorrect Paragraphing	-1	-0	
No Title in Inside Address	-1	-0	
Incorrect Letter/Punctuation Style	-1	-0	_____

IV. MECHANICS

Spelling, Grammar, and Punctuation	-5	-4	-3	-2	-1	-0	_____
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25 POINTS - TOTAL DEDUCTIONS = TOTAL SCORE: _____

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GUIDELINES FOR USING RATING SCALE
FOR OA 210 BUSINESS LETTER
(25 Total Points)

I. TASK

Overall, did the student address the situation and prepare a satisfactory, concise reply?

Maximum number of points to be deducted = 2.

II. ARRANGEMENT

Did the student follow the recommended sequence of ideas for responding inductively?

1. BUFFER: Pleasant, nonargumentative beginning
2. DETAILS: States reasons before refusal
3. DECISION: Refuses request
4. CLOSE: Pleasant, positive ending

Deduct two points for each section omitted or out of order.
Deduct one point for each section that is unclear.

Was the TONE positive?

(Confident, courteous, reader-centered, natural, friendly, sincere.)

Was the WORD CHOICE clear and professional?

(No trite expressions, jargon, redundancies, sexist language, etc.)

Deduct one or two points depending on the situation.

Maximum number of points to be deducted = 12.

III. FORMAT

Did the student include the necessary parts of a business letter--
date, inside address, signature block, paragraphs, titles?
Did the student use modified block style with mixed punctuation?

Deduct one point for each error.

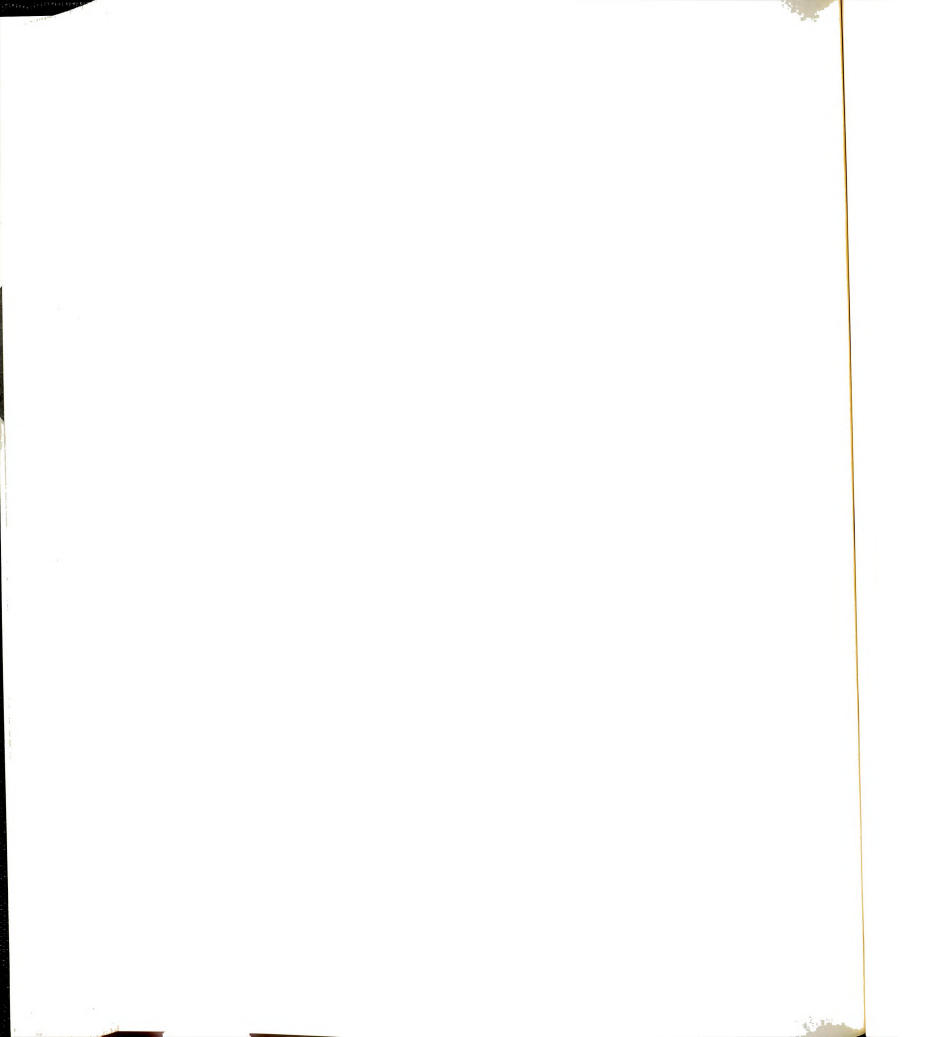
Maximum number of points to be deducted = 6.

IV. MECHANICAL ASPECTS

Did the student use correct spelling, grammar, and punctuation?

Deduct one point for each error in spelling.
Deduct one point for each major error in grammar and
punctuation; i.e., comma splice, run-on sentence, misplaced
modifiers, fragments, subject/verb agreement, pronoun reference.

Maximum number of points to be deducted = 5.



APPENDIX F

COOPERATIVE LEARNING GROUPS OBSERVATION SHEET

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COOPERATIVE LEARNING GROUPS
OBSERVATION SHEET*

Student Observed _____ Group _____

Week _____

Observe the interaction of each member of your group; cite examples illustrating these actions.

Encourages others to participate:

Explains concepts and principles:

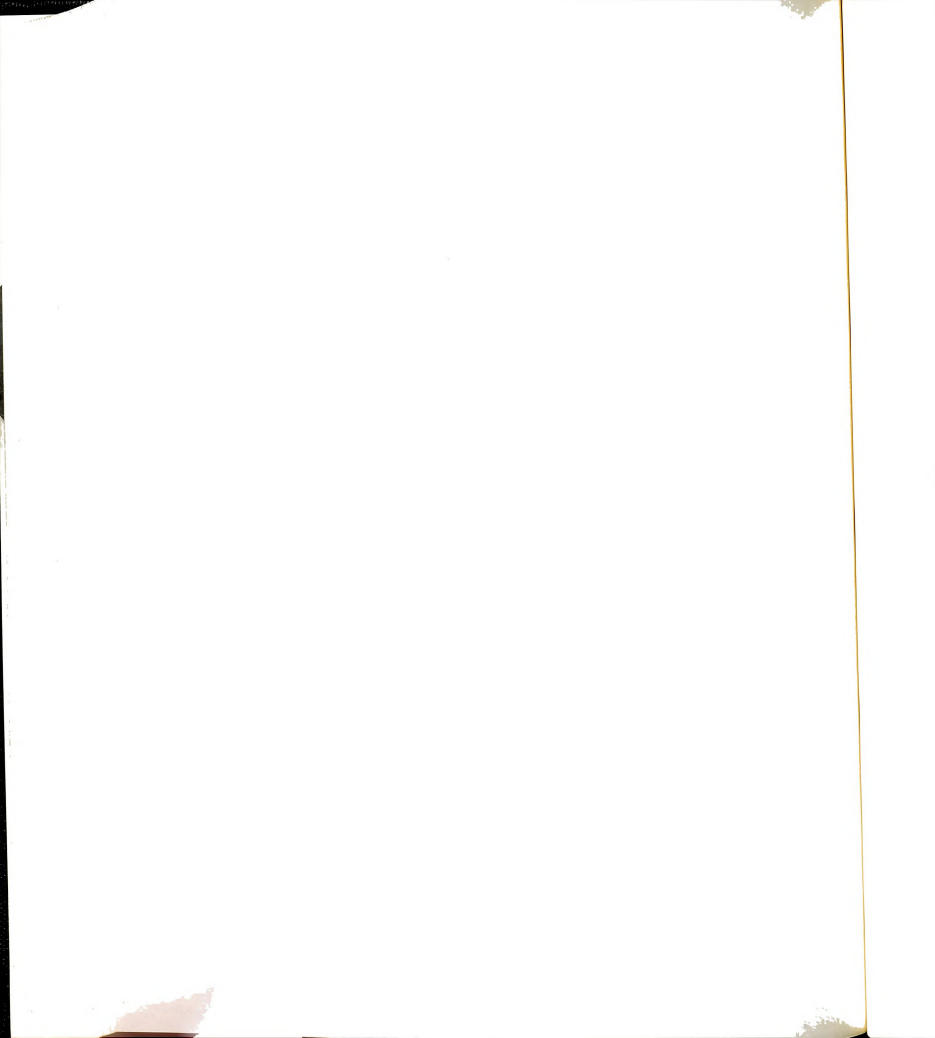
Expresses support:

Gives directions:

Asks for information, rationale:

Paraphrases:

*Adapted from Johnson et al. (1988).



APPENDIX G

COOPERATIVE LEARNING GROUPS SELF-EVALUATION CHECKLIST

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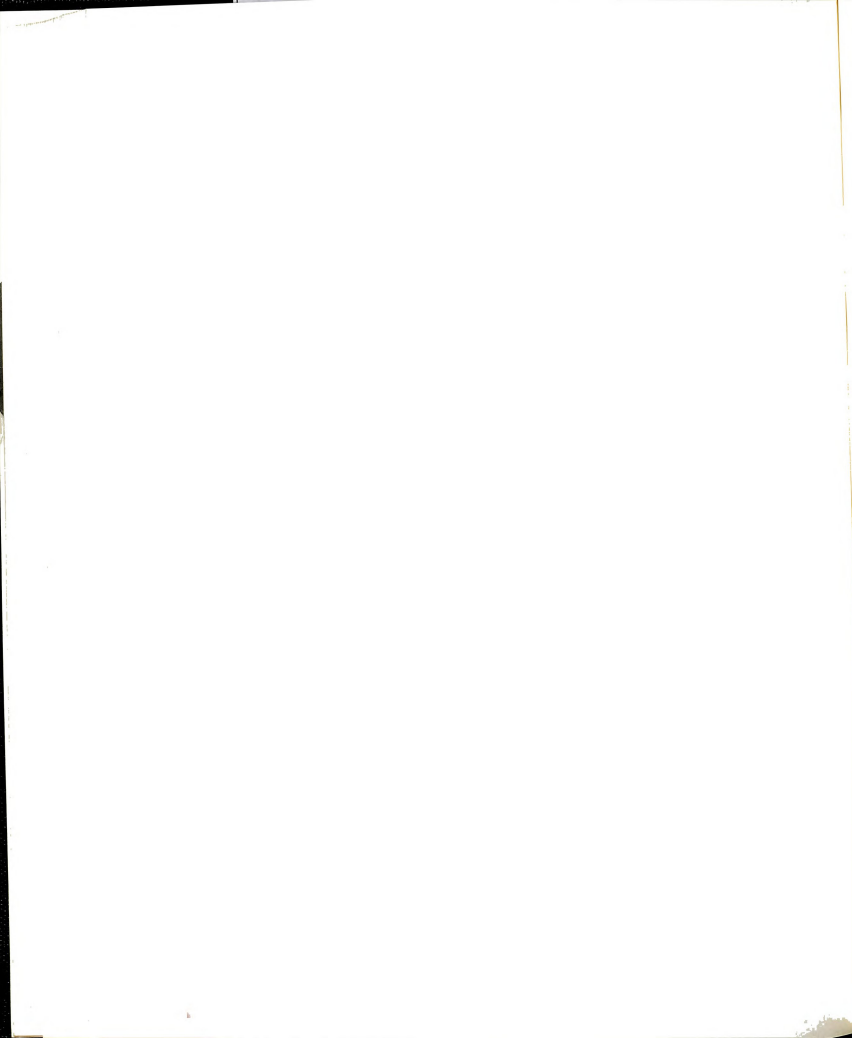
*Adapt

Please indicate how you feel you cooperate in your group by placing an (X) on the corresponding scale.

I keep the group on task.

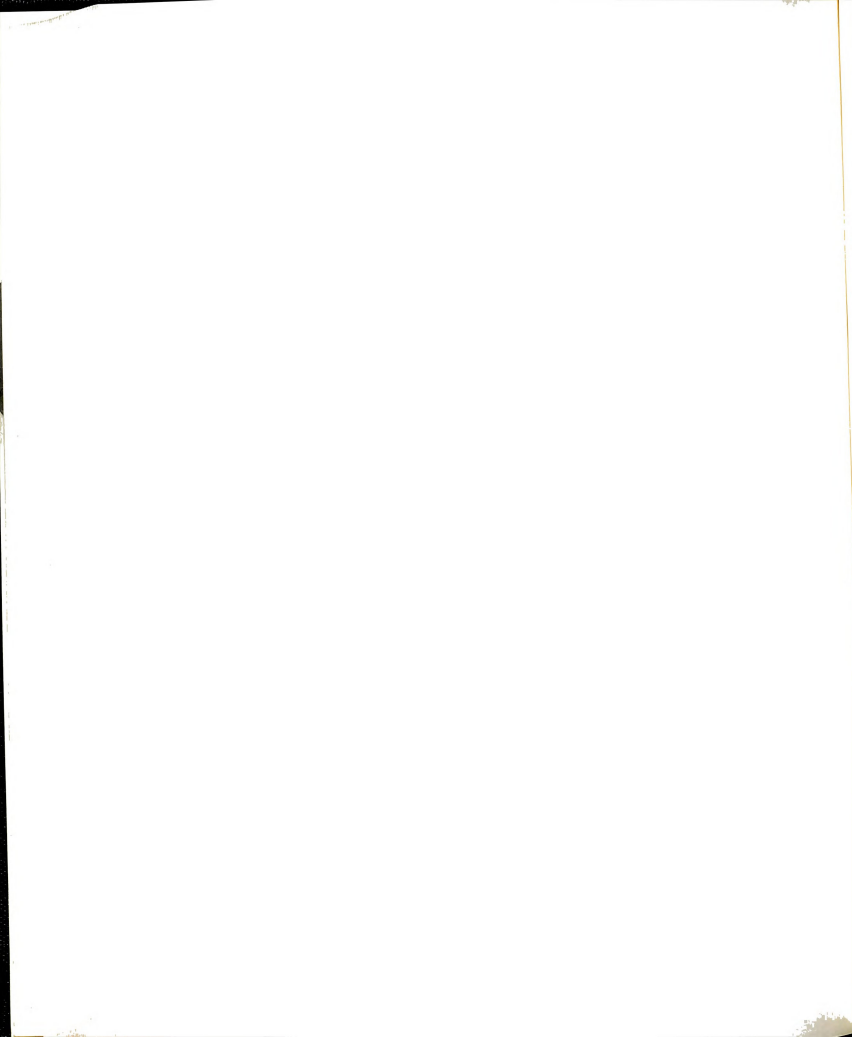
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Always Sometimes Never

*Adapted from Johnson et al. (1988).



APPENDIX H

COOPERATIVE LEARNING GROUPS EVALUATION SHEET



COOPERATIVE LEARNING GROUPS
EVALUATION SHEET I

Name ----- Group -----

Week: -----

DAY 1:

My Role: ___ leader ___ participant ___ absent

Activity: -----

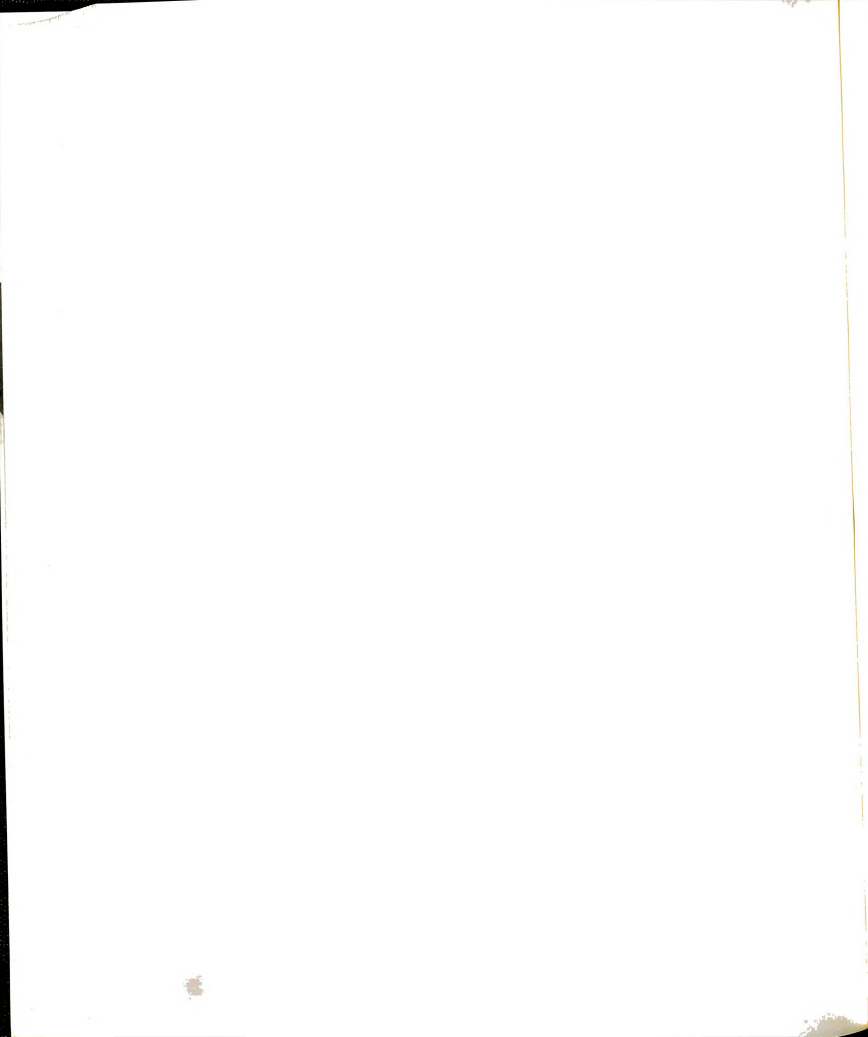
Comments/Observations:

DAY 2:

My Role: ___ leader ___ participant ___ absent

Activity: -----

Comments/Observations:



DAY 3:

My Role: ___ leader ___ participant ___ absent

Activity: -----

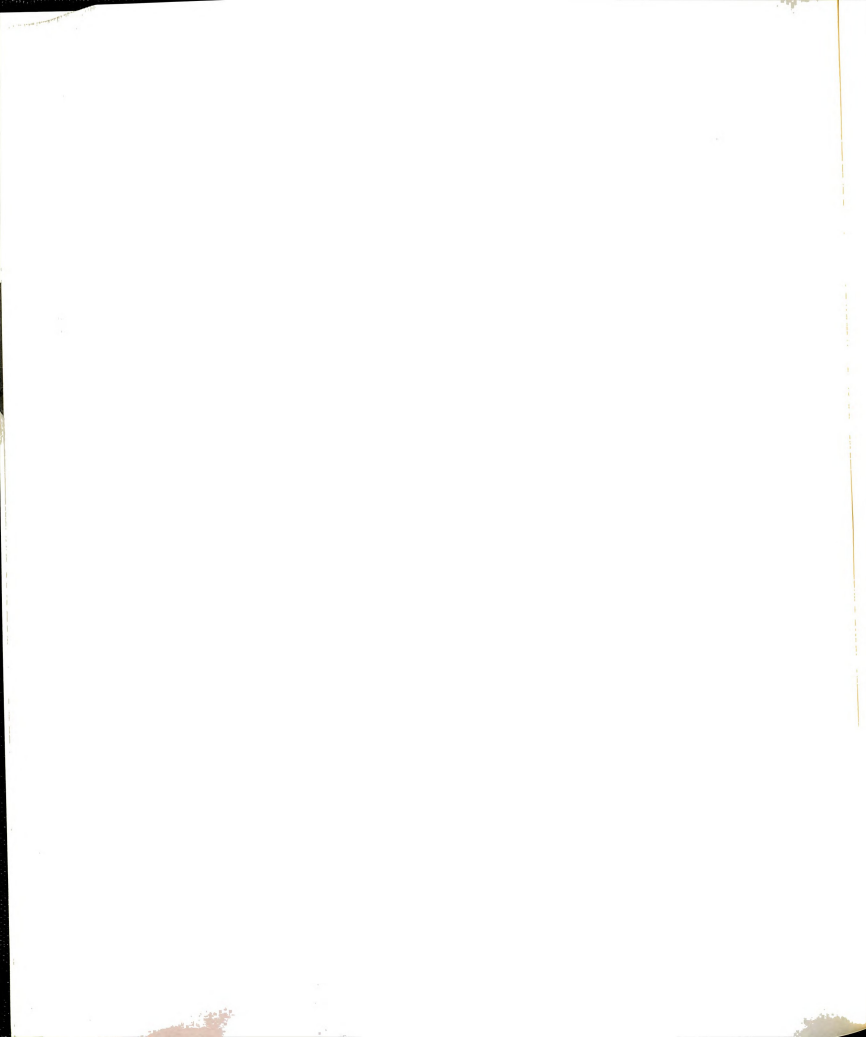
Comments/Observations:

DAY 4:

My Role: ___ leader ___ participant ___ absent

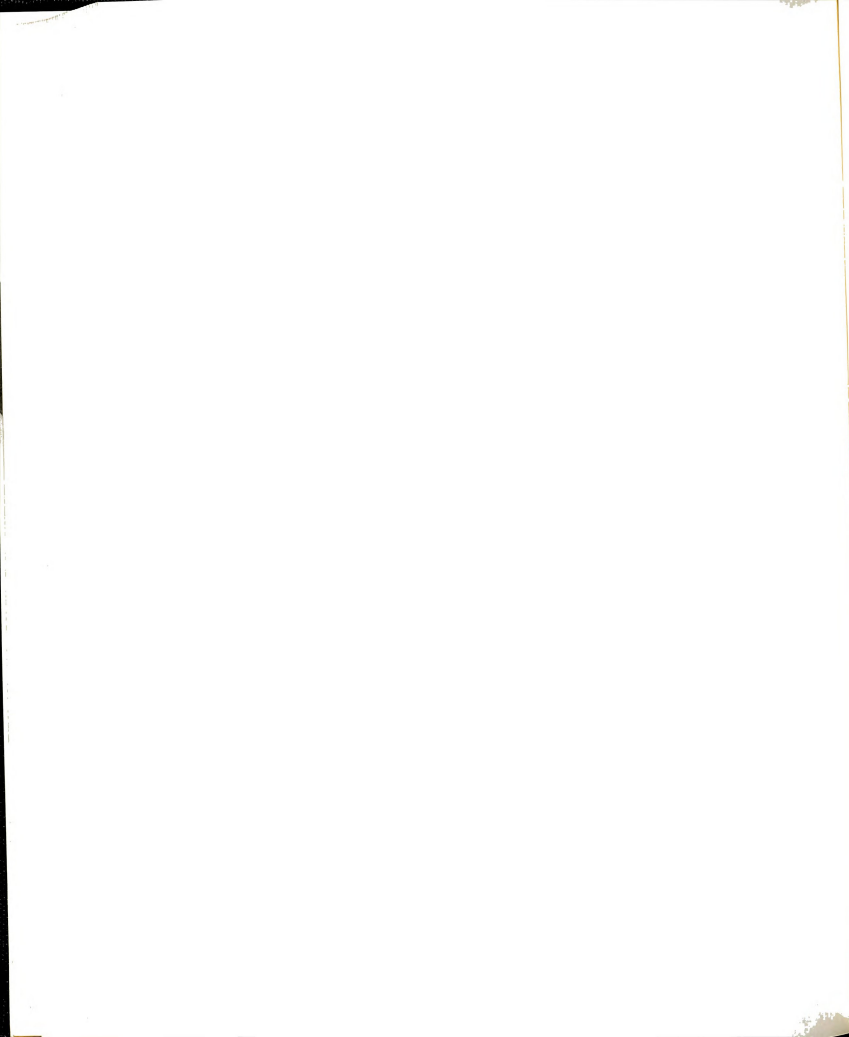
Activity: -----

Comments/Observations:

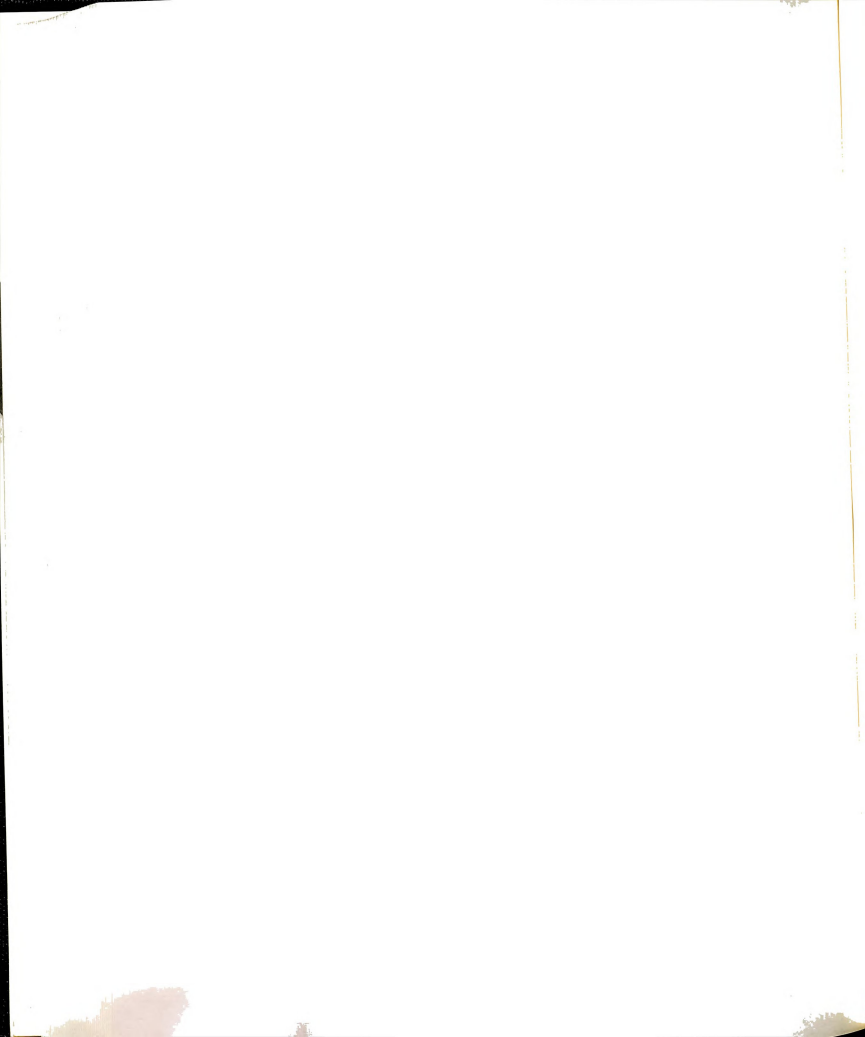


APPENDIX I

OA 210 GROUP WORK EVALUATION

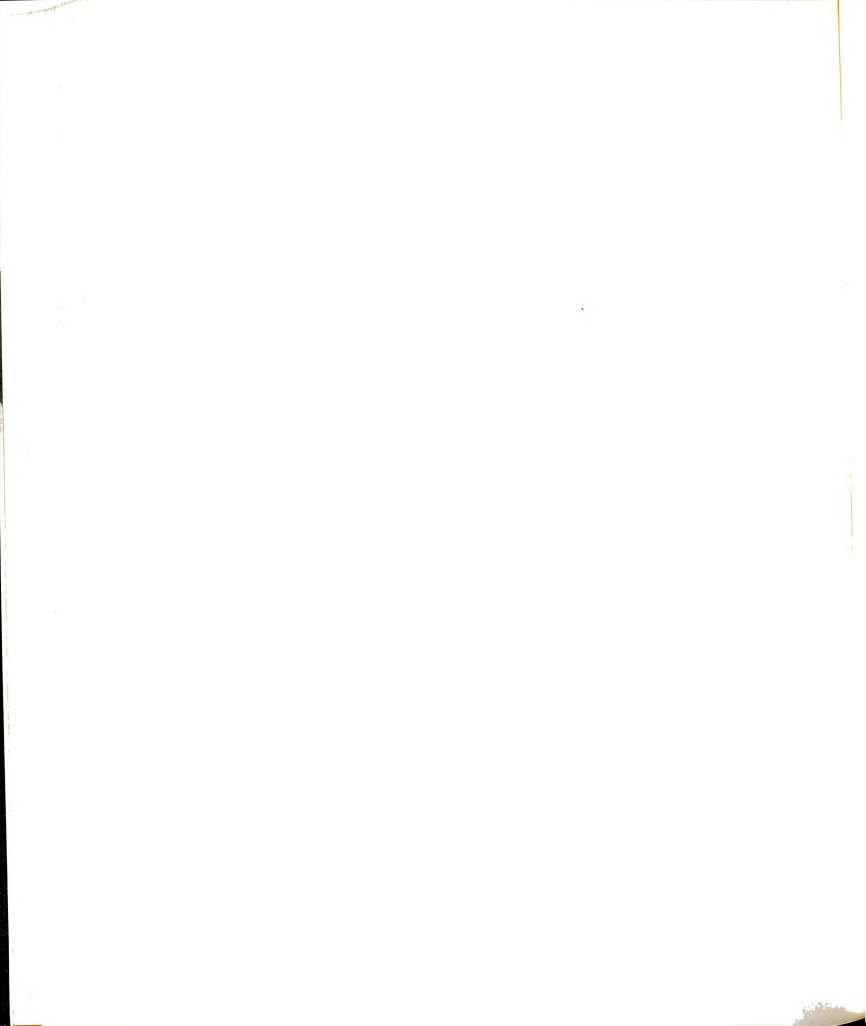


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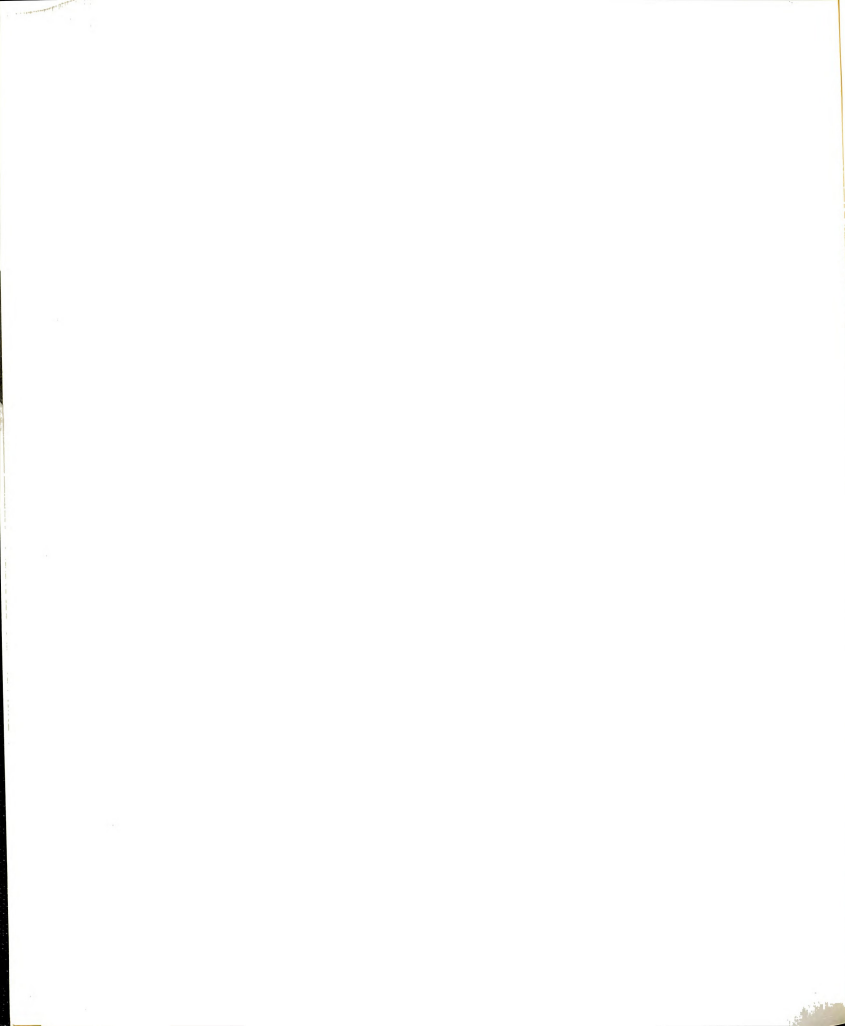


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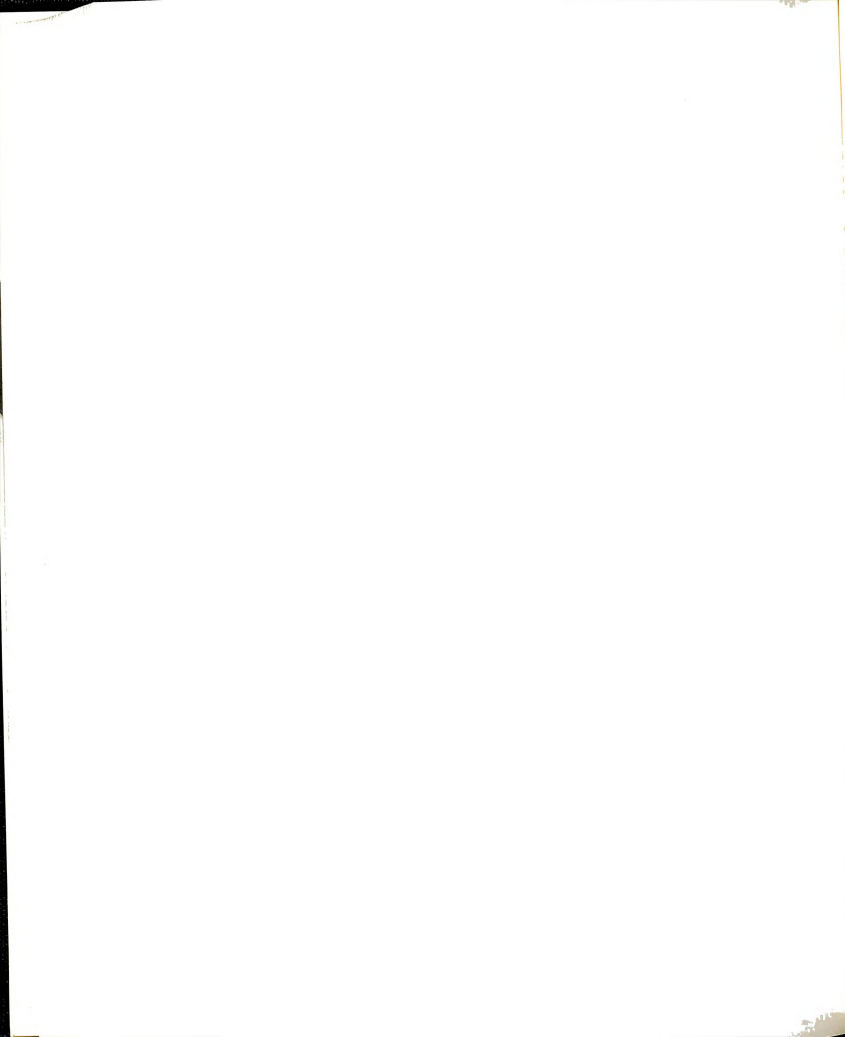
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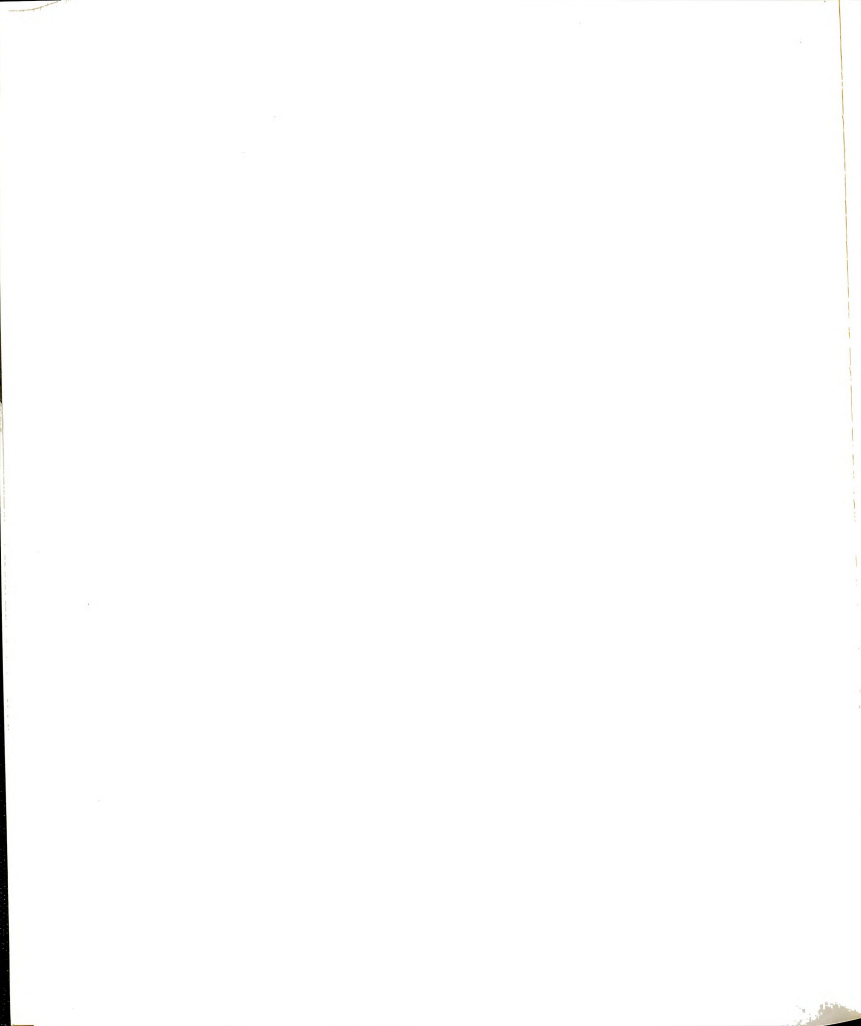
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