THE EFFECTS OF PARTICIPATION IN A BUDDY SYSTEM ON THE
SELF-CONCEPT, ACADEMIC ACHIEVEMENT, ATTRITION
RATE, AND CONGRUENCE LEVEL OF COMMUNITY
COLLEGE DEVELOPMENTAL STUDIES
STUDENTS

DISSERTATION

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By

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This dissertation sought to determine the effects of a buddy system on a student's self-concept, academic achievement, attrition rate, and congruence levels. The buddy system treatment randomly paired two students for the purposes of sharing ideas, working on assignments, getting to know each other, and supporting one another. The study included three randomly selected sections of pre-college level, developmental writing classes from the Brookhaven College of the Dallas County Community College District. Three other classes served as the control group, and one instructor taught all six sections of the course.

Three instruments were used as measures of change: the Tennessee Self-Concept Scale (TSCS), designed by William H. Pitts, measured self-concept levels; the Personality and Educational Environment Scale (PEES), created by Roger Boshier, measured congruence levels; and a written paragraph measured achievement levels in English. Attrition percentages were based on the number of students enrolled
during the second week of class who were not present during the sixteenth week of class.

To test for significance, an analysis of covariance procedure was used on the TSCS, PEES, and written paragraph results, and a test for the difference between proportions for independent groups was used on the attrition percentages. The class sections were nested under either the experimental or the control group to identify significant differences between class sections.

On the TSCS, a significance of .96 among sections and .48 between groups indicated no significant change had occurred in self-concept levels. For the PEES, a significance of .30 among sections and .75 between groups indicated no change had occurred in congruence levels. Finally, on the paragraph assessment, a significance of .87 among sections and .31 between groups showed no change had occurred in achievement levels. However, the test for significance of the difference between attrition percentages revealed that the buddy system treatment was an effective method of retention.
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CHAPTER I

INTRODUCTION

Most community and junior colleges in the United States, as well as many four-year institutions, offer developmental or remedial classes for adult students, usually in the areas of English, reading, mathematics, and study skills. However, close to 50 percent of the students, who every year begin these classes with high hopes and admirable goals, fail to achieve their objectives and drop out before the completion of the class (4, 12, 14). Today there is an increasing awareness of the costs of this kind of attrition, both to students and to institutions. Students who drop out waste time, energy, and money; furthermore, the negative experience may discourage them from ever trying again, either at the original college or at any other school.

Research indicates that a close relationship exists between a student's self-concept level and his academic achievement level (8, 9, 11). Studies also show that when a student feels comfortable in the academic environment, he or she is more likely to persist in his or her classes and to have an overall higher level of personal satisfaction (1, 6, 10). Therefore, it seems reasonable to conclude that an educational environment which encourages student comfort
and promotes satisfaction would also, ultimately, make a positive contribution toward raising self-concept levels, increasing congruence levels, decreasing attrition levels, and fostering academic achievement levels. A buddy system, as proposed by this study, provides that type of environment for adult developmental students.

In reviewing the literature, most of the research dealing with participation in adult education was found to concentrate on only one aspect of participation: the reasons why students enroll in various educational programs. A further review of the literature indicated that participation, as it relates to student involvement in classroom activities, has received only limited attention from researchers. And even though a positive correlation appears to exist between course participation and course satisfaction, few studies have focused on participation activities that allow students to assist in setting course objectives or design learning experiences. No research was found which focused on or measured the impact of increased student-to-student interaction, as was proposed by this study.

This study sought to analyze the effect of a system whereby students were not only allowed to actively participate in class activities, but they were encouraged to interact with one another as a part of their required class activities. This system is called the buddy system.
Through the buddy system, students get to know each other sooner, the social distance between students is reduced, and an avenue is provided for helping one another exchange ideas, discuss fears, and realize hopes.

Statement of the Problem

This study was concerned with determining the effects of a buddy system on student self-concept levels, congruence levels, achievement levels, and attrition levels.

Purposes of the Study

The purpose of this study was to examine the following relationships:

1. The effect of a buddy system on the self-concept levels of students as measured by pretest and posttest scores on the Tennessee Self-Concept Scale (TSCS);

2. The effect of a buddy system on congruence levels (educational-setting comfort levels) of students as measured by pretests and posttests on the Personality and Educational Environment Scale (PEES);

3. The effect of a buddy system on attrition levels as measured by the percentage of students who dropped the class between the second week of class and the sixteenth week of class; and

4. The effect of a buddy system on achievement levels of students in English as measured by pretest and posttest scores on a written paragraph sample.
**Hypotheses**

The hypotheses, as stated, tested whether participation (experimental groups) or nonparticipation (control groups) in the buddy system (treatment) affected self-concept, congruence, attrition, or achievement.

**Hypothesis I.**—The adjusted posttest mean of the experimental group will be significantly higher than the adjusted posttest mean of the control group when controlling for the pretest in measuring self-concept levels of the two groups on the TSCS.

**Hypothesis II.**—The adjusted posttest mean of the experimental group will be significantly higher than the adjusted posttest mean of the control group when controlling for the pretest in measuring congruence levels of the two groups on the PEES.

**Hypothesis III.**—The attrition percentages at the end of the semester for the students in the experimental groups will be significantly lower than the attrition percentages for students in control groups at the end of the semester.

**Hypothesis IV.** The adjusted posttest mean of the experimental group will be significantly higher than the adjusted posttest mean of the control group when controlling for the pretest in measuring achievement levels of the two groups on a written paragraph sample.
Significance of the Study

Since adult developmental students often engage in learning activities at a relatively high risk to an already damaged self-concept, it is in the interest of teachers of adults to become more knowledgeable about the types of factors which contribute to the success of these students in educational programs. This study proposed to contribute to the field of already existing knowledge in the following ways.

1. It explored the extent to which a buddy system influences self-concept, congruence, attrition and achievement.

2. It proposed to add to the theoretical knowledge about the types of activities which contribute to adult learning.

3. It sought to provide a concrete, inexpensive technique that teachers could immediately apply to various educational settings.

Empirical research findings have reported on the relationship of self-concept to achievement, but this study focused on a specific method for raising a student's self-concept and educational-setting comfort level in order to promote achievement in a specific subject area and to reduce attrition percentages.

Definition of Terms

Buddy system is a method or procedure by which two students are paired together for the purpose of sharing ideas
working on assignments, getting to know each other, and supporting one another. To assign buddies, pairs of numbers (one through ten) were placed in a jar. Then the jar was passed around the class, and the students drew out a folded piece of paper which contained a concealed number. They unfolded the paper to reveal the number. By matching their number to another student's identical number, a buddy was found. In class, students spent a minimum of twenty minutes, but not more than twenty-five minutes, together each week. That was approximately 15 percent of the total class time. However, some buddies continued their association outside of class time by studying together, checking notes, or socializing in some form. That behavior was acceptable as no limit was placed on the extra time that buddies might spend together. In other words, there was a minimum time limit that buddies must spend together but no maximum time limit. Finally, if a student's buddy dropped out of class, the student was matched to the next person who also lost his or her partner. Until a new partner was found, the student worked with any pair he chose to work with as a third person. If the class began with an odd number of students, one "buddy system" had three students in its group.

Self-concept is a global image of one's self which includes all that the individual has distinguished as being fairly stable and characteristic of himself. It usually
includes all of the person's attitudes, feelings, and knowledge about his abilities, skills, appearance, competencies, and social acceptability (13). For the purposes of this study, the TSCS was used to measure the self-concept of students.

Academic achievement is the mastery of a school discipline, in this study limited to English and measured by a written paragraph sample.

Congruence is the "... correspondence between the way one sees herself and the way she would like to be" (2, p. 188). Congruence was expressed by a lack of distance (smaller positive or negative numerical results on the PEES) between the individual's perception of himself and his perception of the other individuals within the educational setting. The distance existed as it was understood by the student and as it was manifested through activities in the learning environment. Incongruence was measured by the degree of distance (larger positive or negative numerical numbers on the PEES) between the participants rating of "myself as I would like to be" and his ratings of "myself as I am," "my instructor," and "other adult students." Therefore, a congruent student was one who was comfortable in the educational setting (7). For the purposes of this study, congruence was measured by the PEES. The PEES produced fifteen discrepancy scores for each of the three scales (a total of forty-five individual
discrepancy scores). The forty-five individual scores were summed and divided by forty-five, resulting in a single, total, concept-pair, discrepancy score.

Dropout is a student who was present after the first full week of classes but was not present during the last week of classes.

Limitations

The researcher had no control over the extent of "natural" buddying or pairing of students which occurred within the control group of students. Students were surveyed (see Appendix E) to ascertain the amount of time that students in both groups (experimental and control) reported spending together outside of their class time. Also, the researcher was unable to control the random assignment of students to classes.

Delimitations

The population studied in this research project consisted of community college students in a large urban city. The selected classes were composed of participants in a precollege level developmental writing class. All of the classes, in both the control and the experimental groups, were taught by the same instructor.
The Population

All of the students in the experiment were participants of the Developmental Writing 090 (DW090) course taught at Brookhaven College in Farmers Branch, Texas. Most of the students received three nontransferable credits for the class, but three students enrolled as community service students and received no credit. The class was selected by students because of self-realized personal needs or because they were advised by a school counselor to enroll. Students were counseled into the class as a result of weak (or a lack of) high school grades, low Scholastic Aptitude Test (SAT) scores, or inadequate scores on the Brookhaven assessment tests. Cross, in Beyond the Open Door (3), refers to these students as "new students." Her research shows that most of these students, if they graduated from high school, ranked in the lowest third of their high school school class when measured by grades on traditional tests of academic achievement. She finds that of all of the data she has collected on these students, none is more distressing than those figures which show these students' perceptions of themselves as losers in the educational race; however, none of the students were required to take the DW090 course.

Brookhaven College is one of seven colleges in the Dallas County Community College District (DCCCD). Each semester, Brookhaven has a student population of approximately 7,000 students, with another 7,000 students enrolling
as noncredit community service students. In the fall of 1984 (the semester before the experiment was run), the average age of the credit students was 26.8 years, and the average semester load was 9.3 hours. Two-fifths of the students were males and three-fifths were females. Eighty-six percent were Caucasian; 4.2 percent were Black; 4.7 percent were Latin American; and Orientals, American Indians, and others made up the rest of the students. Of the students, 60.4 percent were new to Brookhaven that semester.

Treatment of Data

The data collected for this study were treated by the following methods.

1. The data on the Tennessee Self-Concept Scale (TSCS), the Personality Educational Environment Scale (PEES), the written paragraph sample, and the attrition levels consisted of quantitative results for both the experimental and control classes.

2. An analysis of covariance (5) was performed on the score results from the TSCS, PEES, and paragraph sample to determine the significance of the difference between the prescores and postscores of the experimental and control groups of classes. The results of these tests are shown in tabular form.

3. A test of the significance of the difference between two independent proportions (5) was performed on the
attrition level results for the experimental and the control groups of classes.

4. Data findings are reported, and conclusions are drawn based on these findings.

Summary

In Chapter I, the concept of measuring the effects of a buddy system on student performance and attrition was introduced. It was shown that researchers have investigated other aspects of participation, but no research was found which focused on the impact of increased student-to-student interaction as described by this study. The stated purpose of this study was to measure the effect of this interaction on developmental writing students in a community college setting: the Tennessee Self-Concept Scale (TSCS), Personality Educational Environment Scale (PEES), a written paragraph sample, and attrition level percentages resulted in quantitative scores which were used to measure the effects of the treatment. The results were utilized in an analysis of covariance for the TSCS, PEES, and paragraph sample. A test of the significance of the difference between two independent proportions was performed on the attrition level results.

The review of the literature in Chapter II is divided into sections which cover the research on developmental studies, the characteristics of developmental students, attrition and retention data, self-concept as it relates to
achievement, congruence theories, and alternative educational procedures for developmental students. The procedures for the collection and treatment of data are reported in Chapter III. An analysis of the data is presented in Chapter IV. Finally, a summary, conclusion, and recommendations for future research are found in Chapter V.


12. Texas Education Agency, Course Withdrawal Data Summary, Fall 1976, Texas SIS Follow Up, Postsecondary Student Follow-up Management Information System, Monograph 2, Austin, Texas, 1977. ED 140 905.


Developmental Studies Research

Traditionally, American college and university programs have been developed to serve the instructional needs of young, single, unemployed students, who were able to devote their full time and effort toward the pursuit of a college education. These students, however, no longer make up the majority of college students. Cross (32) finds that contemporary learners are older, more experienced, and demonstrate a greater variety of needs.

The needs of some of these new students are recognized in the literature.

Plagued by increasing numbers of students who are unable to write coherent sentences or handle simple arithmetic, more and more colleges and universities are finding they have to offer remedial work in such basic skills. . . . Few institutions of higher education, including some of the most prestigious, have been able to escape the problem, and mounting alarm among college officials has produced growing efforts to deal with student deficiencies (66, p. 1).

A study of adult functional competency in the United States, conducted at the University of Texas in 1975, determined that twenty-three million Americans had difficulty coping with everyday chores: shopping, reading, and filling out forms. Another thirty-nine million were barely getting by,
and less than half of the adult population was proficient in dealing with the complexities of modern life (61). In his studies, Rouche (75) found that millions of young people each year were condemned to live nonproductive lives because they either dropped out of school before completing high school, or they graduated without the knowledge and skills necessary to participate effectively in society. In some poverty stricken areas, he found dropout rates reaching as high as 70 percent. He wrote,

There are an estimated 15 million functionally illiterate students in this country. In one year, one-third of the youth who failed the Armed Forces Qualification Test had high school diplomas, yet that test is based on fifth- and sixth-grade levels of reading and math (75, p. 3).

Other sources find that even though students are spending increased time and effort in English courses, all indications are that verbal scores on the Scholastic Aptitude Test (SAT) have deteriorated at an alarming rate (27, 40, 94). During the 1960s, public schools were increasingly challenged, not only because of their failures and lack of service to the poor, but, according to Cross, for the fact that they were "positively destructive influences for many of the children entrusted to their care" (29, p. 61). Now, these children have grown up and have become college students. With their erratic school records, unimpressive test scores, and poor chances for success, they have increasingly turned for help
to the developmental or remedial programs within the colleges and universities.

Cross (27), in Accent on Learning, provides a review of the literature on the school's response to, what she terms, the "new student." She indicates, however, that there have always been remedial students. Some colleges, going as far back as the 1800s, have had remedial courses. The land grant colleges, created by the Morrill Land Grant Act of 1862, gave substance to the concept that each individual, regardless of his economic status, should have the opportunity to progress educationally to the maximum of his potential. The first course in remediation for academic difficulties was introduced at Wellesley College in 1894. Since that time, the notion that colleges are responsible for helping students with weak academic backgrounds has grown. In the early years of this century, poor study habits were perceived to be the cause of low academic performance, and in the late 1930s and 1940s, remedial reading projects were added to how-to-study courses (18, 91). However, by 1970, Cross found that 80 percent of all community colleges (public and private) were providing some sort of special service for the academically disadvantaged. In 1978, Roueche (74) found 86 percent of all colleges providing some kind of special services for this population.

Thus the community colleges with their open admissions policies, which allow all individuals who are eighteen years
or over and who appear capable of profiting from instruction to attend, have received the bulk of these students. Gleaser writes that the "open door" has become the hallmark of the community college movement. "Its democratic style, positive philosophy, and social promise appeal to the American people, winning great popularity and support" (43, p. 47). In an earlier writing (42), Gleazer calls the community college, "democracy's college." Roueche (74) finds that by definition, and by law in some states, community colleges are "second chance" institutions. Moore finds the open-door policy to be the distinguishing feature of the community college. "The new philosophy and challenge have been accompanied by a parallel emphasis on higher education for the masses" (60, p. 4). The fact that most community colleges are located within fifteen miles of their student populations and that fees are modest or nonexistent has further contributed to the accessibility. As a result of the open-admissions and easy access policies, staggering numbers of students, who had previously been eliminated, have enrolled for college, and remediation efforts within the colleges have become increasingly more important.

A variety of terms have been used to describe these special courses: developmental, directed, compensatory, guided, basic, remedial, and advancement studies. Roueche and Wheeler (72, p. 223) state that the term remedial implies the remediation of student deficiencies in order that the
student may enter a program for which he was previously ineligible. While developmental or compensatory, on the other hand, refers to the development of skills or attitudes and may not have anything to do with making a student eligible for another program. Whatever the name, most of these programs are designed to develop the student's basic skills to a level which is more closely matched to his potential (27, 70, 72).

Developmental studies programs are uniquely devised and operated. The goals of developmental programs, according to Garonzik (40), are twofold: first, the improvement of cognitive skills to the extent that students can progress in either the academic or vocational area; second, affective development to improve the self-concept of students, provide a sense of motivation for self-improvement, and provide successful experiences in an educational environment.

Developmental programs have diversified organizational structures. In a survey of Texas community colleges, Garonzik (40) finds several organizational patterns, which are listed in order of their popularity: first, the addition of compensatory courses to a discipline's curricula; for example, the addition of a reading course to the list of approved courses in English; second, working with an interdisciplinary group of instructors who remain attached to their discipline but who coordinate activities with instructors from other disciplines; third, establishment
of a division or department of developmental studies which plans, coordinates, and allocates funds for instruction, counseling, and other support services; and fourth, the establishment of learning centers which contain full-time administrators, instructional staff, counselors, and other support service personnel. The major characteristics of developmental studies, as revealed by Garonzik's survey, are as follows: small classes to encourage individual assistance to students; innovative instructional methodology, including pretesting for placement, individualized instructional materials, extensive use of audio-visual support materials, flexible entry and exit times (self-pacing), use of para-professionals, and the use of peer tutors; and, a redefinition of the roles of instructors and counselors. More than 30 percent of the institutions surveyed by Garonzik state that counseling is a part of the teaching process. Many of the colleges use counselors, in conjunction with the registration process, to communicate to students the reasons for enrolling in developmental courses. While looking at their records and test scores, students are advised of their relative chances of success, given several options. Thus, the colleges do make use of standardized test scores, but not for admission purposes.

Although developmental programs have become commonplace in community colleges since the late 1960s, there is little
evidence to measure their impact. Often the designs of the research studies have not been adequate, or various studies have offered conflicting results. If the purpose of remediation is to raise grade-point averages (GPA), evaluations to date have offered little assurance that improved grades are a likely outcome (27, 70, 74). Santeusanio (76) concludes that evaluations of remediation courses, using GPAs as the criterion, give inconsistent results. He cites eleven studies with positive results and thirteen studies that show no results.

Characteristics of Developmental Students Research

The characteristics of developmental students have been studied by many researchers. Moore describes them as follows.

They are of different races, religions, abilities, economic levels, and social classes. Some are foreign-born. Many are war veterans and housewives. Some appear to be free of such afflictions. There is but one characteristic common to all these students: they have not performed well academically (60, p. 62).

Moore finds that the developmental student is no stranger to failure; in fact, failure is often a psychological expectancy. This is true whether the student looks backward or forward in his educational experience. "The majority of disadvantaged students, perhaps two-thirds of them, are at the fifteenth percentile and below, and, in some community colleges, this group may be one-third of the entering freshmen" (60, p. 110).
Mink also finds that developmental students identify with failure. "They actually pursue failure with the same vigor other students pursue success" (58, p. 33). The student is academically unprepared, lacks motivation, and is deficient in self-confidence (22, 32, 45, 70). Research shows that this student often has a "failure identity," and he is controlled externally rather than internally (41, 57, 69). Boshier (10) describes him as "deficiency motivated."

Skelling (80) finds developmental students to be totally disinterested in the developmental classes which are recommended for them; thus, motivation is a problem. Roueche (70) agrees with Skelling's analysis, going on to say that the students are characterized by feelings of powerlessness, worthlessness, alienation, and inappropriate behaviors. Thornton (89) finds it ironic that developmental students accept the school as the avenue by which their deprivation can be overcome, considering their continual failure in this setting.

Cross (27, 28, 29, 30, 31), who has done extensive research on community college programs, refers to developmental students as "new students." She finds them to have adaptive, passive attitudes and to state that they feel nervous and tense in classes. They also tend to be more interested than traditional students in grades and extrinsic rewards. She is further struck by the similarities
between field-dependent individuals, as described by Witkin (96), Witkin and Moore (97), and Witkin and others (98), and developmental students. A summary of these characteristics is listed in Figure 1. Cross writes that field dependency is an important characteristic to deal with when planning educational programs. Traditional education has been geared more to the style of "field independents" than to the style of "field dependents." She says that schools need to be educationally equal for all, "fraud exists when we open the college doors to everyone but then narrow the exit gate so that only those who fit the traditional mold pass through" (27, p. 5). Roueche expresses similar sentiments, "Almost all colleges profess open door admissions policies. However, nontraditional students do not persist long. Therefore, philosophy and practice are at odds. The open door must be more than an admissions statement" (73, p. 6). Skellings (80) refers to the open door as the "revolving door": a phenomenon which results in high attrition levels for developmental students.

Attrition-Retention Research

Attrition research, as a whole, focuses more on counting, describing, and classifying dropouts than in seeking solutions to the problem. Thus, Astin writes, "Dropping out of college is a little like the weather: something everyone talks about but no one does anything about" (2,
Field Dependents

Like being with and relating to people. Well-developed social sensitivity.

Attracted to careers and college majors emphasizing interpersonal relations.

Sensitive to the judgments of others. Tend to be guided by authority figures. Dependent on others for self-definition. Lack independence and autonomy.

Extrinsically motivated, responsive to social reinforcement.

Poor analytical problem solving.

Favor a "spectator approach" to concept attainment. Tend to accept problems as defined by others rather than impose their own structure.

Field-dependent women favor traditional women's roles. Come from social and cultural backgrounds stressing obedience to authority and "tight" role definitions.

New Students

Spend leisure time with people. Report most important experiences are being with others.

Attracted to careers that work with people.

Low scores on tests of autonomy, measuring independence of thought and judgment. Compliant to wishes and ideas of those in authority.

Motivation for education is extrinsic; high interest in grades, better jobs, higher salaries.

Low scores on Theoretical Orientation (TO) Scale of OPI (Omnibus Personality Inventory), a scale for measuring preference for analytical and critical thinking.

Score low (are more passive) than traditional students on the OPI Active Passive scale. Tend to accept situations as defined by others.

Career choices are strongly sex stereotyped. Come from blue-collar families. Favor traditional social values and respect authority.

Unfortunately, many students register for classes and then withdraw after the first week, or they never actually withdraw at all but just disappear. Snyder and Blocker (83) found in a study on developmental students, who dropped out over a three-year period at Harrisburg Area Community College in Pennsylvania, that between 33 and 40 percent of their students did not return for a second year's work. Ludwig and Gold (53) reveal that only 37 percent of remedial students at Los Angeles City College achieved a grade average of C, and only 34 percent completed two years of college. Cohen (21) reports that the typical urban community college experiences annual student dropout rates of more than 50 percent. Schenz (78) put the figures even higher, stating that 75 percent of low achieving students withdraw during their first year. Bossone's (13) research supports these figures. He writes that in one typical California public junior college, 80 percent of the entering students enrolled for remedial English, but only 20 percent completed the course and enrolled in a regular college English class.

Reasons for dropping out, which are more important than the numbers, have been studied by many researchers. Hoyt, however, finds the results disappointing and misleading; he writes:

1. The real reasons may be unknown to the researcher.
2. The researcher may be unwilling to identify the real reason.
3. Multiple reasons may exist whose independent contributions are impossible to disentangle. 
4. Reasons are confused with actions ("took a job" is an action motivated by any number of possible reasons--"needed money" or "needed experience" or "needed professional contacts") (46, p. 77).

Seven general categories have been identified as reasons for dropping out of classes by Cope and Hewitt (25) in their factor analysis of self-reported problems accounting for withdrawal. The following factors account for 62 percent of the total variance: social, academic, family, religion, finance, club membership and discipline. The Texas Education Agency (86) finds that three reasons account for most dropouts: attendance problems account for 28 percent; conflicting job hours account for 14 percent; and grade problems account for 13 percent. In 1969, Thompson (88) surveyed over 3,563 students who dropped 6,081 courses at McComb County Community College. Of the multiple reasons given for dropping out, the most common were job conflicts, lack of interest, wrong program, academic difficulty, and conflicts with teachers.

Roane State Community College, in Tennessee, reports (67) that contrary to what might be expected, 81 percent of most classes were dropped for reasons other than academic or grade related. The one reason most often chosen by their students (28 percent) seemed to be scheduling conflicts with work, other classes, or other duties. The second ranking category included a series of academic reasons, with 19
percent saying that they were making less than a passing grade. Of the drops, 78 percent occurred during either the first or the last week of school, yet two-thirds of the students only dropped one class. Other studies report similar results (3, 31, 33, 64, 95).

Several researchers have looked at the reasons for attrition from a different angle. They have attempted to identify specific aptitudes or psychological characteristics of these students (35, 46, 100). Wilson (95) found a consistent personological portrait when he used the **Adjective Check List** (ACL) measurement to study dropouts. The dropping students ranked higher in scales rating heterosexuality and change, but they were lower on achievement, order, and endurance. They were more rebellious, hostile, impatient, comfortable with disorder, indifferent to the feelings of others, desirous of attention, and required more supportive and dependent relationships. They were less task-oriented, unable to sustain prolonged effort, and unwilling to subordinate themselves to others. Data from thirteen private colleges compiled by Hannah (46) explored the personality traits of "dropouts" and "stay-ins." He found significant differences on several scales.

Individuals of both sexes who think at a less simplistic level; who exhibit greater tolerance for ambiguity and experimentation; who tend to express impulses in terms of overt action; who are more hostile, aggressive, and anxious, and who tend to create poorer personal impressions will more likely than not be found among dropouts (46, pp. 13-19).
Verner and Davis (92), in reviewing thirty studies dealing with completions and dropouts in adult education, mention twenty-six personal factors which were tested by various researchers in attempting to identify persisters. They find that age, education, marital status, occupation, income, and rate of social participation appear to be related to persistence. Taking another approach, Scanlan and Darkenwald (77) report that attempts to predict participation based on socio-demographic variables and motivational orientation factors are disappointing. As they studied participation in continuing education, the construct of deterrents to participation made the most meaningful contribution. Six factors, related to this construct, proved to be important: disengagement (related to one's general level of activity and involvement), cost, family constraints, lack of benefits, lack of quality, and work constraints. On the other hand, Cope and Hewitt (24) emphasize in their writings that there is no such thing as a dropout personality. Instead, they view the dropout phenomenon to exist as a result of a series of interactions between the student and the institutional environment.

Self-Concept and Achievement Research

Various studies indicate that the way a student perceives himself is significantly related to the student's achievement or lack of achievement (4, 5, 14, 16, 17, 20,
Hansford and Hattie (47) reviewed the results of 128 studies dealing with the relationship between self-concept and performance. These studies represented a total sample of 202,823 people and produced a data base of 1,136 correlates between self-concept and performance measures. An average correlation of +.21 was found. The more significant modifiers were the grade level (the highest relationship in high school), socioeconomic status (higher are more related), ethnicity (Anglo, Black, Indian, in that order), and ability of subjects. West and Fish (93) have done a similar review of the empirical studies concerned with self-concept and achievement. They conclude that a significant relationship clearly exists between some aspects of self and scholastic achievement, with correlations ranging from +.18 to +.50. Several studies, which measured gains in self-concept and achievement over time, have been able to positively change the self-concept of students (17, 32, 87). Thomas (67) conducted a study examining gains in scores on self-concept (general) and achievement (grade-point average) over several months. The main experimental treatment involved attempting to change the self-concept with appropriate techniques. Thomas noted that improvement in self-perception "tends to reflect itself in improved academic performance as assessed by grades" (67, pp. 62-63). Wylie reports correlations of "mostly around +.30" (99, p. 361)
between grade-point average and measures of overall self-regard. And Puckey writes, "The best evidence available suggests that it is a two-way street, that there is a continuous interaction between the self and academic achievement and that each directly influences the other" (60, p. 23). Beane and Lipke (6) report finding correlations of +.76 between achievement and self-concept, and Slaninka (81) states that writing skills of adults improve because of increased self-concept.

Other sources, taking another approach to the relationship between self-concept and achievement, have established a correlation between underachievers and negative self-concepts. Goldberg (44) finds underachievers to be less able to fulfill required tasks, less eager to learn, less confident, and less ambitious. Shaw (79) states that underachievers have more negative self-concepts than achievers and demonstrate less mature behavior than their achieving peers. Combs (23) says that underachievers see themselves as less adequate and less accepted by others.

Monroe (59) finds underachievers feeling as if they are "whipped" before they get started. They express a "well what's the use" attitude toward college life in general (59, p. 108). They perceive the school environment to be an undependable one, offering only obstacles and confusion. Brookover calls this the self-concept of academic ability.
Self-concept of academic ability refers to behavior in which one indicates to himself (publicly or privately) his ability to achieve in academic tasks as compared with others engaged in the same task. We perceive of self-concept of academic ability as only one of the many concepts of self. Other concepts of self refer to other areas of behavior which may vary from that involving school behavior (15, p. 8).

Brookover states that the self-concept of academic ability is a necessary but not sufficient condition in school achievement. The results of his research tend to confirm this hypothesis.

Many educators, now serving adults, believe that programs must build the students' self-confidence in their ability to succeed at college-level studies. Miller finds "many reentry students have previously left college because of the 'fear of failure' syndrome; they justifiably correlate achievement with ability and ability with worth" (55, p. 50). Beery (7) finds adults believing that "A" students are better people than "D" students. He says that they need help in understanding the realities of education and educated people. Beane's (6) research shows that about one-fifth of a person's sense of self is derived from school experiences and that "self within the institution" and "self as engaged learner" are the most salient categories within that experience (34). The Association for Supervision and Curriculum Development finds that the self is learned. "What is learned can be taught. . . . The question is not whether
we approve of teaching for a positive self in the public schools. We could not avoid affecting the self if we wanted to" (1, p. 101).

Congruence Theory Research

Throughout the literature, congruence plays an important role. Although the concept may be called self-acceptance, person-environment fit, or a lack of dissonance, the basic idea remains the same. Cross finds that "the greater the correspondence between the way one sees herself and the way she would like to be, the greater the self-acceptance." She goes on to say that theoretical research supports this notion, "self-accepting people are better adjusted and more accepting of other people than those with large discrepancies between the perceived self and the way they would like to be" (27, p. 188). She points out that most people perceive more negative self-traits than do observers, and that with group explorations, they begin to realize that their inadequacies are not so unique. They come to realize that even with their shortcomings, they can be accepted and even admired by others.

Tinto (90) has developed a conceptual approach that integrates the student with the institution along two dimensions, the academic and the social. In Tinto's theory, retention and attrition result from the interactions that take place between students and the institution. The term
"fit" describes the interaction for those who stay and "lack of fit" the interaction for those who leave. "Fit" involves several factors: moral and social interaction, meaningful contact between student and faculty, development of relationships between students and those who care about them, and the responsiveness of the institution to the needs students feel.

Festinger's (37) cognitive dissonance theory adds insight about person-environment interaction. His research deals with one's perceptions and knowledge about one's self, the social environment, and the individual's positions and situations within the environment. Dissonance or nonfitting relations, among these elements, gives rise to pressures to reduce the dissonance. One may choose to reduce the dissonance through behavior change, perception change, or by seeking out new information that improves the fit. Furthermore, he finds that the magnitude of the dissonance and the pressures to reduce it are greater when the elements are more highly valued.

Still another theoretical view of congruence, as it affects retention and attrition, was developed at Miami-Dade Community College by Plannery and others. Incongruence was defined as the discrepancy between the student's expectation and the realization of those expectations. Attrition was the result of a combination of factors that contributed to whether or not a student's expectations could be realized.
Flannery divided these factors into the categories of society, student, and college. He developed his model with descriptors for each of the concepts, which were then illustrated as three overlapping circles.

**Society:** legislative support, peer pressure*, economic factors, environment factors, ethnic group, expectations*, neighborhood, parental expectations, and alternatives.

**Student:** decision to enroll, interaction with peers and faculty*, involvement in extra-curricular activities*, self-advisement, expectations*, prior preparations, goals*, abilities, motivation*, interest*, and feelings*.

**College:** quality of instructional programs, curriculum*, financial aid, policies*, procedures*, facilities, advisement*, budget, research, placement*, methods*, counseling*, and evaluations* (38, p. 74).

Flannery then proposed methods by which each level within the institution would be responsible for helping students to determine educational goals and to attain them. Although all of the elements in Flannery's study are not related to the "buddy system" proposal, the items marked with an asterisk are involved.

Other researchers have studied the concept of congruence (26, 48, 51, 52, 84); however, Boshier's work (9, 10, 11, 12) has been the most influential in the design of this study. Borrowing from Carl Roger's terminology, Boshier theorizes that incongruences develop within the person (intra-self) and between the person and other-than-self (self-other) experiences. Either type of incongruence leads to anxiety, which is a "subjective state of uneasiness, discomfort, or unrest" (9, p. 260). Anxiety causes the
individual to adopt defensive strategies which include a closing of cognitive functioning to elements of experience. Thus, Bosher finds, "both adult education participation and dropout can be understood to occur as a function of the discrepancy between the participant's self-concept and key aspects (largely people) of the educational environment" (9, p. 260). Using the PEES (Personality and Educational Environment Scale) to test congruence levels at three New Zealand educational institutions with 2,436 participants, Bosher has found several facts: first, that self-ideal incongruence generalizes to or pervades other social relationships; second, that dropping out is a function of the cumulative effect of self-other incongruence which initially resides within the participant; third, that discrepancy scores are inter-related, and when one or more of them are high, dropout will occur; and fourth, that the congruence part of his model has both inter-institutional generality and predictive power. Bosher's participation model is presented in Figure 2.

Boshier writes that the educational institution has an obligation to assist students in becoming better adjusted to the school setting, "nonparticipation and dropout do not reside exclusively within the participant. The onus for matching participants and educational environments rests with administrators organizing educational experiences for
adults" (9, p. 279). He further calls for the identification of congruence-inducing variables in order to involve students and avoid dropouts.

Fig. 2—Boshier's participation and dropout model.
Effective Educational Procedures and the Buddy System Research

Research indicates that several variables have been identified which consistently contribute to the success of adult students. Davis (34) has found that a significant relationship exists between the actual teacher-controlled activities which occur during the first class session and the subsequent attitudes of participants. In classes with low dropout rates, more participants have an opportunity to introduce themselves, and the instructor talks to students as equals.

Astin (2) writes that community colleges pay a price for their low cost, conveniently scheduled courses, and easy accessibility to students. "By minimizing disruption in the student's outside life, involvement in the educational process is likewise decreased" (2, p. 167). Astin recommends participation as a significant contributor to success. "Students concerned about maximizing their chances of finishing college should seriously consider leaving home and living in a college dormitory" (2, p. 107). Participation with peers and involvement in school activities increases the student's chances of realizing his goals. Lenning writes, "On-campus residence is important to retention" (51, p. 96). He finds student involvement in extracurricular activities to be positively related to retention.
Instructional methods also affect student success rates. Bloom (8, p. 1) finds that specifying learning objectives in precise terms and using well organized, self-paced instructional sequences to reach those objectives can guarantee learning for up to 90 percent of all students. He believes that anyone can learn a subject to mastery if given adequate time and appropriate help. Bloom calls for holding attainment constant but letting the time vary according to student needs.

Cross (30) observes that doing more of what has not worked before with unprepared students is not the route to success. "If a kid can't jump four feet, it does no good to raise the bar to four feet eight inches" (30, p. 8). She writes that educators should make use of "cognitive learning styles," saying that they are fundamental and pervasive to the success of education.

In brief, people have characteristic ways of using their minds. Psychologists label these mental characteristics cognitive styles, and their importance to education is fundamental and pervasive. Cognitive style is a potent variable in students' academic choices and vocational preferences; in students' academic development through their school careers; in how students learn and teachers teach; and in how students and teachers interact in the classroom (76, p. 1).

Cognitive style means that the subject to be learned and the manner in which it is presented interact with one's ability to learn. Cross (29) finds developmental students or, as she terms them, "new students" to be field-dependents, a
type of learner whose characteristics were described earlier in this study.

Roueche (74) wants to see educators accepting the developmental student where he is before attempting to move him somewhere else. Based on responses to a questionnaire which surveyed developmental programs in colleges, Roueche has found that the following factors are significantly related to completion of a degree or certificate program. The respondents said that in their opinion the program at their college was successful when written course objectives were distributed to students, when tutors were trained in techniques which developed positive self-concepts in their tutees, and when developmental students were compared favorably with other students at the college by the developmental faculty (74, p. 78). Attempts to remedy self-concept were found to exist in every successful program (74, p. 86). The importance of helping the student to develop and to maintain self-confidence appeared throughout the literature (40, 58, 62, 68).

Chauso (19) interviewed instructors who maintained 90 percent retention rates at the City Colleges of Chicago. He found that their courses were well organized, the materials related to student needs, lecture methods were not heavily used, and the instructors took a personal interest in each student. Peer groups were utilized, students were able to
establish friends in the class, and absences were quickly brought to the students' attention by the instructor.

Skellings (80) did an experiment involving a control and an experimental group of freshmen English classes. The experimental group worked on individualized projects in small groups. The control group did regular reading and essay type assignments. The experimental group showed greater improvement in fluency and had one-third fewer absences. She noted that encouraging peer interaction improved motivation, supported students, provided continuous feedback, and allowed peers to monitor one another's work (80, p. 13). Other studies have also confirmed the value of students working together in groups (40, 57, 85).

The idea of a buddy system, or a similar type of concept, has been recommended throughout the literature, but it has never been tested for results. Cross writes, "There is considerable educational merit in promoting the concept of buddy tutoring." She finds that buddy tutoring develops the "tutor's sphere of competence" (29, p. 166). In 1976, Cross (27) wrote that research evidence supports the notion that students with a high desire for close, friendly, interpersonal relations do better and develop problem solving skills when they are assigned to work on problems in pairs (27, p. 125). Then in a speech given at a national developmental studies conference in 1984, Cross said, "One important
suggestion from the corporate world for stimulating unusual
effort on the part of ordinary people is to make people
members of winning teams" (30, p. 11).

Fader advocated a return to the concept of the old one-
room school house, where older children taught younger ones.
He has successfully grouped students in trios for years, yet
he has never empirically tested his results.

I tell the members of each group that they belong to
each other. I require each of them to take responsi-
bility for both the quality and quantity of learning
accomplished by the other two members of their group.
I tell them that no one member of the group can
complete my course satisfactorily unless, within their
capacity, every other member of the group does well.
... No antidote for swollen classes is as effective
as students who share responsibility for teaching each
other, and a teacher who insists upon sharing that
responsibility (36, p. 12).

Michaelsen expresses a similar perspective in his
statement on team learning. He finds that team learning
actively involves students in the learning process because
permanent groups become cohesive enough to serve as a major
source of motivation and social support. "As a result,
attendance in team learning classes is exceptionally high,
and the percentage of students who drop out is quite low"
(54, p. 1). Other benefits go beyond the classroom,
fostering friendships which provide social support, supply-
ing information about coping with the school, and encourag-
ing opportunities for students to develop interpersonal
skills.
Other researchers have also commented on the benefits of students pairing up for activities (56, 57). Cope finds, "Peer support in a collegiate social system has been shown to be associated with persistence in college" (26, p. 9). Foss and Whipple write, "Without a sense of community built into the learning process, school becomes for the peer-oriented student . . . 'wipeout' time, literally a reformatory, with little positive reinforcement potential" (39, p. 18). He finds the answer for this problem in the formation of intimate "face-to-face groups." And finally, Roueche writes that a particularly effective method, for allowing students to see that they are not the only ones with non-traditional or disadvantaged backgrounds, is the small group discussion or individual, one-to-one, interaction (70, p. 70). Students learn to relate to their peers and develop more positive self-concepts in these settings. The pairing of students provides opportunities to reinforce others and to develop more acceptable behaviors. Thus, a student is able to experience success in an educational setting for perhaps the first time.

Summary

In this chapter various studies were reviewed. First, the history, purposes, and needs of developmental studies programs were examined. Second, the developmental studies student himself was described. Various studies cited
portrayed this student as being "failure oriented" and "passive" in his approach toward educational situations. Third, the problem of attrition and retention was examined with emphasis on community college developmental studies students. Retention was determined to be an even greater problem for this population of students than it is for other college students. Next, self-concept as it relates to academic achievement was reviewed. The research showed that the way a student perceives himself is significantly related to his achievement or lack of achievement. Then, congruence theories or person-environment fit approaches were reviewed. Finally, methods and educational strategies for working with these students were cited. One important strategy, that helped developmental students, involved early intervention systems which encouraged student interaction.
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CHAPTER III

PROCEDURES FOR COLLECTION OF DATA

This chapter describes the procedures used for the collection of the data, the experimental treatment, the research design, the instruments used to measure change, and the statistical tests.

The data for this study were collected through the following steps.

1. Permission to conduct the study was obtained from the appropriate officials of the college. Subjects for this study were students who registered in the spring semester, 1985, at Brookhaven College of Dallas County Community College.

2. The Tennessee Self-Concept Scale (TSCS), which required approximately twenty minutes to administer, was given during the second and sixteenth weeks of class. It was given to all of the students in the three experimental and three control classes of Developmental Writing 090. The following precautions were taken to guard against the Hawthorne effect, a problem which causes participants to alter their performance because they are aware of participating in an experiment (1). All of the students were told that they were members in an experimental research project,
but they were not told whether they were in the treatment or the control group. The TSCS was administered by the instructor in the classroom, and the results were scored by the Brookhaven College Testing Center.

3. The Personality and Educational Environment Scale (PEES) was also administered during the second and sixteenth weeks of the semester to all of the students in both groups (see Appendix A). The measurement was administered in the classroom by the instructor, who had obtained permission from the author to use the scale and, if necessary, to alter the directions on the scale to fit this particular study (see Appendix G). However, only the titles of the specific scales were changed from "Other Adult Students" to "Developmental Writing Students." In examining the data produced by the PEES, it is important to understand that a discrepancy score was not the raw score. The raw score on the first three concepts (Other Students, My Instructor, and Myself) were subtracted from the scores on the fourth concept (Myself-As-I-Would-Like-To-Be). The subtracted score represents the psychological distance, as perceived by the student, of himself "as-he-would-like-to-be" as compared to the other important people in the classroom, including himself as he saw himself performing at that time in the classroom (2).

4. The written paragraph sample was given during the same weeks as the TSCS and the PEES. The paragraph was written during class time with the students choosing to write
on one of three possible topics. The pretests and posttests were scored at the same time, after the close of the semester, by professional experts in the field of English. By scoring all of the topics at one time, a consistency of grading standards was maintained. Furthermore, by scoring all of the paragraphs at the same time, the graders were unable to distinguish between the pretreatment and posttreatment papers.

5. Attrition was measured by establishing the dropout rate percentages for each of the groups. This was accomplished by the following method. First, the total number of students present during the second week of class was tabulated for each of the groups. Second, the number of these students who dropped out of each group by the sixteenth week was calculated. Finally, the attrition percentage was arrived at by dividing the total number of students present during the second week of class into the number that represented the dropout figure.

6. The control group of students received no special treatment. These students were involved in the regular skill lessons, writing exercises, and lab assignments, which are typical for this type of class. However, no effort was made to either encourage the students to participate with one another or to keep them apart from each other. During the sixteenth week of class, all students in both groups completed a Student Interaction Time Survey (see Appendix E). The purpose of the survey was to determine the amount of time
that students in the control group reported spending together compared with those in the experimental group.

7. Biographical data inventories were completed in the classroom during the first week of classes. That information was used to further identify the population of students participating in the study. A copy of the Biographical Data Inventory is contained in Appendix C.

The Experimental Treatment

Buddies were assigned to each other during the first week of class. They were encouraged to get to know each other, to exchange phone numbers, and to take some measure of personal responsibility for their partner's level of success within the class, as advised by Fader (9). During class time, the buddies engaged in educational activities for a period of not less than twenty minutes nor more than twenty-five minutes per week. This was approximately 15 percent of the total class time. The "buddy activities" were typical yet simple exercises which might have been a part of any English class (see Appendix H for a list of these activities). However, the buddies had to discuss the assignment with one another in order to complete the task. Control group students, on the other hand, did the same content type of activities as the experimental groups, only they did them alone on an individual basis.
Research Design

Using three different instruments, a nested design, as represented by the following diagram, was used in the experiment. The classes were nested under the experimental or control groups to recognize the possibility of initial basic differences between the class sections (see Table I).

<table>
<thead>
<tr>
<th>Experimental Treatment (1)</th>
<th>Control Treatment (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morning Sec.005 (11)</td>
<td>Morning Sec.001 (21)</td>
</tr>
<tr>
<td>Afternoon Sec.002 (12)</td>
<td>Afternoon Sec.003 (22)</td>
</tr>
<tr>
<td>Evening Sec.505 (13)</td>
<td>Evening Sec.504 (23)</td>
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<td>$\bar{x}_{11}$</td>
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<td>$\bar{x}_{12}$</td>
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</tr>
<tr>
<td>$\bar{x}_{13}$</td>
<td>$\bar{x}_{23}$</td>
</tr>
</tbody>
</table>

For example, were the students who signed up for the 10:00 AM class different in some way from the students who signed up for the 6:45 PM class? This design enabled the researcher to investigate the possibility of a treatment-classtime interaction (6, 10).

Of the classes which were randomly assigned to either the control or the experimental groups, three subgroups immediately became obvious: a morning, an afternoon, and an evening subgroup. The morning subgroup consisted of the
experimental section 005, which was taught from 10:35 to 11:50 AM on Tuesday-Thursday, and the control section 001, which was taught from 10:00 to 10:50 AM on Monday-Wednesday-Friday. The afternoon subgroup consisted of the experimental section 002, which was taught from 12:00 to 1:15 PM on Monday-Wednesday, and the control section 003, which was taught from 1:20 to 2:35 PM on Monday-Wednesday. The final sections, the evening subgroup, consisted of the experimental section 505, which was taught from 6:45 to 8:00 PM on Tuesday-Thursday, and the control section 504, which was taught from 5:20 to 6:35 PM on Tuesday-Thursday.

Because the researcher was unable to control the random assignment of students to classes, the use of design control over the experiment was not possible. Therefore, statistical steps were taken to lessen the effect of the initial differences between the groups. First, classes were randomly assigned to either the control or experimental groups by using a table of randomly assorted digits (1). A coin was flipped to decide whether to go across or down the table. Classes were numbered one through six in chronological time order of when they were offered during the week. Monday was the first day and Friday was the last day. Thus, sections 002, 005, and 505 were designated as experimental classes, and sections 001, 003, and 504 were designated as control classes. Second, analysis of covariance was used on the TSCS, PEES, and paragraph sample to compensate for initial differences between
the groups. Borg and Gall (1) wrote, "analysis of covariance reduces the effect of initial group differences statistically by making compensating adjustments of the final means on the dependent variable" (1, p. 462). Thus, the use of analysis of covariance controlled any initial differences in the students which might have been present and which might have confounded differences between the test results for the two groups of students (14, 17).

Six classes of students, with approximately twenty students per class, were involved in the experiment. The number of students in the treatment group (N = 59) and the control group (N = 60) was approximately equal; a total of 119 students participated in the study.

Instruments

The following instruments were used to measure the self-concept, congruence, and achievement levels of the experimental and control groups of students.

1. The Counseling Form (Form C) of the Tennessee Self-Concept Scale (TSCS) was used for measuring self-concept; it is appropriate, according to the author, for subjects of the ages of twelve and over. This scale, which was designed by William H. Fitts and published by Counselor Recordings and Tests, is a self-report scale which measures self-concept across five general areas: physical self, moral-ethical self, personal self, family self, and social self (19). The stated
purpose of the test is to gain knowledge of how an individual perceives himself for use in helping the individual or for evaluations of him. Fitts writes that the individual's concept of himself is highly influential in much of his behavior and related to his general personality and state of mental health (11).

The scale consists of 100 self-descriptive statements which the subjects use to portray their own pictures of themselves. An overall total score ("P" score) is provided which Fitts says is the single most important score on the Counseling Form.

It reflects the overall level of self esteem. Persons with high scores tend to like themselves, feel they are persons of value and worth, have confidence in themselves, and act accordingly. People with low scores are doubtful about their own worth; see themselves as undesirable; often feel anxious, depressed, and unhappy; and have little faith or confidence in themselves (11, p. 8).

The standardization for the norms was based on 626 people aged 12 through 68. There were approximately equal numbers of both sexes, both Black and White Subjects, representatives of all social, economic, and intellectual levels, and educational levels from sixth grade through doctoral degrees. Subsequent norm research used a variety of respondents from several samples. Data collected from other studies show group means and variances which are comparable to those of the norm group (12, 13, 20). Reliability data, based on test-retest with sixty college students over a two-week period, found a
reliability coefficient of 0.92 for the total positive or "P" score. Congdon (7) used a shortened version of the scale in his study and still obtained a reliability coefficient of 0.88 for the total positive score (P).

Other evidence of reliability was demonstrated in profile patterns for the same individuals over even longer periods of time. The author found that distinctive features of individual profiles were still present for most people a year or more later. Reliability coefficients for various profile segments of the entire test ranged from 0.64 to 0.92. Validation of individual scale items was accomplished through the use of seven clinical psychologists. The ninety items utilized in the scale were those that had perfect agreement by the judges. Validation procedures also included discrimination between groups, correlation with other personality measures, and personality changes over particular conditions (11).

The TSCS was previewed for vocabulary problems prior to administering the form, and no words were found that would give the students difficulty. Considering the fact that the test was written for people down to the age of twelve, this was not surprising. However, students were encouraged to ask questions if they had difficulties. One foreign student had an idiomatic problem with the expression, "I often act like I am 'all thumbs.'"
2. The Personality and Educational Environment Scale (PEES) is a modified semantic differential scale (see Appendix A), created by Roger Boshier, with cross-cultural and inter-institutional generability (3). According to Warrand and Knapper (21) and Diggory (8) the semantic differential is an important method for assessing the interaction between people and situations. Boshier states that congruency as measured by low discrepancy scores on the scale (assumed self-other similarities) is associated with persistent educational behavior. On the other hand, noncongruency or dissimilarity (higher scores) is associated with dropping out (4, 5). Other researchers have also recognized that both participation and dropout stem from the interaction of internal psychological and external environmental variables (15, 16, 18). These concepts of congruency and discongruency lay behind the creation of the scale.

The PEES was used to measure the congruence level of students within the educational setting by looking at four broad concepts: Other Adult Education Students, My Adult Education Lecturer, Myself, and Myself-As-I-Would-Like-To-Be (3). Each concept was measured with fifteen specific scales. To test the notion that educational congruence was influenced by the degree of discrepancy between the participant's ratings, three discrepancy scores were calculated: "Myself-As-I-Would-Like-To-Be--Other Adult Students," "Myself-As-I-Would-Like-To-Be--My Instructor," and "Myself-As-I-Would-Like-To-Be
"Myself As I Am." A discrepancy score on one scale represented the absolute difference (either negative or positive) between a respondent's rating of "Myself-As-I-Would-Like-To-Be" and the other concept involved. Thus, forty-five individual discrepancy scores were derived in all. Next, the forty-five scores were summed and divided by forty-five, resulting in a single concept-pair discrepancy score which represented the total of all the scores.

Individual items on the PEES were constructed by analyzing letters from dropout students who stated their reasons for having left courses. The most frequently occurring adjectives used to describe elements of the adult education environment were assembled into forty-one adjective pairs. From the initial pairs, only those items which were reliable across the four concepts involved in the test were used. Subjects for the reliability study were fifty-four university extension students. Over a six-week test-retest period, twenty-seven of forty-one adjective scales were found to be sufficiently reliable (i.e., had a critical value of at least $p < .05$ level). Final eligibility was determined by factor structuring the PEES scales. Fifteen adjective pairs were chosen which were related to three even broader concepts: (1) Personal warmth--sympathetic-unsympathetic, friendly-unfriendly, warm-cold, lively-dull, sociable-unsociable; (2) Conventionality--conventional-eccentric, conservative-liberal, conformist-nonconformist;
and (3) Personal effectiveness—stimulating-boring, strong-
weak, rational-irrational, active-passive, scholarly-
nonscholarly, organized-disorganized, lively-dull (3, p. 19).

To insure that the scales would be a valid sample of
the total universe of adjectives used by dropouts to describe
educational settings, the forty-one test PEES scales were
factor analyzed and rotated. The rotation yielded twelve
factors accounting for 78.7 percent of the variance. The
factoring procedure along with the reliability check enabled
the author to compile fifteen reliable, factorially repre-
sentative, and meaningful scales which were used to construct
the PEES (3).

The researcher previewed the PEES for vocabulary problems
prior to administering the test. Several words and some con-
cepts were found which presented possible difficulties for
the students. As a result, a vocabulary list for the PEES was
developed (see Appendix F). The students reviewed this
explanation sheet with the instructor before taking the test,
asked questions, and referred back to the sheet while taking
the PEES.

3. A written paragraph was used to measure achievement
in English. All of the pre- and post-paragraphs were graded,
at one time, by impartial graders. Pre- and post-paragraphs
were mixed together so that the graders were unaware of which
paragraphs were pretests and which ones were posttests. The
graders consisted of faculty members from Brookhaven College who had volunteered to help in this study. The paragraphs were graded on a scale of one to four, with four being the highest score. In order to insure that all of the graders were using the same standards, a practice session took place before scoring the paragraphs. The graders practiced scoring sample paragraphs until they consecutively scored several paragraphs in a row with the same score. Once the scoring began, two readers scored each paragraph. Any paragraphs which resulted in a difference of scores between readers were read by a third reader and discussed by all of the readers. In the end, all three readers agreed upon the final score. Standards for grading the paragraphs are contained in Appendix B.

Procedures for Analysis of Data

All of the data collected are illustrated in tabular form. The TSCS, PERS, and paragraph sample measurements produced interval level data as final scores. For hypothesis I, II, and IV, mean scores were calculated for both the experimental, control, and nested groups. Then an analysis of covariance was used to test for significance. Hypothesis III, the percentage of attrition differences, used the test for the difference between proportions for independent groups to test for significance (9).
Summary

In this chapter, the procedures for the collection of data were presented. It was explained that 119 developmental writing students took part in a project which sought to bring students together, sooner in the semester, for the purpose of increasing their interaction time. The effects of the interaction was measured by pretest and posttest scores on the TSCS, PEES, and the paragraph samples. Attrition levels were also measured. After the project was completed, the results were assessed through the use of analysis of covariance and a test of the significance of the difference between two independent proportions.

Then an explanation of the experimental treatment was provided with emphasis given to the simplicity of activities which could serve as a catalyst to promote student interaction.

In the last section, a description of the Tennessee Self-Concept Scale, Educational Environment Scale, and paragraph sample was presented. The "P" score used on the TSCS was shown to be the most important single score on the Counseling Form. Similarly, a single concept-pair discrepancy score was used as the final score on the PEES.
CHAPTER BIBLIOGRAPHY


CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

In this chapter the statistical results of the data are presented. The chapter is divided into sections which cover the four research hypotheses: self-concept, congruence, achievement, and retention as affected by the buddy system. Each of the first three sections are further divided into two subsections dealing with the following data: (1) cell means, standard deviations, and adjusted means, and (2) analysis of covariance tests of significance using unique sums of squares. The four research hypotheses were stated as follows.

Hypothesis I.--The adjusted posttest mean of the experimental group will be significantly higher than the adjusted posttest mean of the control group when controlling for the pretest in measuring self-concept levels of the two groups on the Tennessee Self-Concept Scale.

Hypothesis II.--The adjusted posttest mean of the experimental group will be significantly higher than the adjusted posttest mean of the control group when controlling for the pretest in measuring congruence levels of the two groups on the Personality and Educational Environment Scale.
Hypothesis III. The attrition percentages at the end of the semester for the students in the experimental group will be significantly lower than the attrition percentages for the students in the control group at the end of the semester.

Hypothesis IV.—The adjusted posttest mean of the experimental group will be significantly higher than the adjusted posttest mean of the control group when controlling for the pretest in measuring achievement levels of the two groups on a written paragraph sample.

The data were collected at Brookhaven College of the Dallas (Texas) Community College District; six classes of Developmental Writing (DW090) were randomly selected with 119 students participating in the study.

Biographical data were obtained from the data form (see Appendix C). The students involved in the study ranged in age from fifteen to fifty-five. The fifteen-year-old student was also in high school and attended the college at night with permission from his high school principal. Of the students, 38 percent were twenty years of age or younger, 34 percent were between twenty-one and twenty-five, and 28 percent were over twenty-five years of age. There were seventy-seven males (65 percent) and forty-two females (35 percent), a typical ratio for developmental writing classes. Only 20 percent of the students did not work at a job and lived with their parents, while approximately 66 percent of
of the students held down full-time jobs (more than twenty-one hours per week) in addition to attending school. Less than half of the students lived at home (45 percent), 37 percent lived alone or with roommates, and the rest lived with their spouses and children (18 percent). Of the students, 13 percent (sixteen) had never graduated from high school and 36 percent (forty-four) were in college for the first time. Twenty-one students were from foreign countries (18 percent) with half of the number arriving within the last five years. The students represented a variety of countries: Viet Nam—seven, Cambodia—one, Korea—four, Nigeria—two, Japan—one, Netherlands—one, Ethiopia—one, Poland—one, Mexico—one, Belgium—one, and Syria—one. A summary of the biographical data is contained in Appendix D.

Hypothesis I: The Effect of the Buddy System on Self-Concept

The Tennessee Self-Concept Scale (TSCS) Counseling Form (Form C) was used to measure change in self-concept levels for which the buddy system may have been responsible. This scale, which was designed by William H. Fitts, consists of 100 self-descriptive statements which the subjects used to portray their own pictures of themselves. The overall total score (P score), which Fitts says is the single most important score on the counseling form (5), was used as the final raw score.
A standard statistical computer program package, the Statistical Package for the Social Sciences (SPSS-X), was used to analyze the data (8). The Multivariate Analysis of Variance (MANOVA) procedure computed the means, standard deviations, adjusted means, and unique sums of squares analysis of covariance. "MANOVA is a generalized multivariate analysis of variance and covariance program" (3, p. 465). The program provides univariate and multivariate linear estimations and tests of hypotheses for any nested design with a covariate.

If a researcher has two or more independent variables (factors) or more than two levels of a single independent variable, then an analysis of variance should be used. And if there are two or more criterion measures involved in the study, then a multivariate analysis of variance, abbreviated MANOVA, is required (6, p. 184).

Table II gives the cell means, standard deviations, and adjusted means for both the pretest (TSCS-A) and the posttest (TSCS-B). The factor heading indicates whether the group was experimental (1) or control (2). The code heading indicates individual class sections which are coded 1 through 6. Codes 1 and 4 were morning sections; codes 2 and 5 were afternoon sections; and codes 3 and 6 were evening classes. The weighted observed mean, standard deviation from the mean, adjusted mean, and the number of students in each nested section are also listed. The weighted observed means were weighted by the number of students in each section. Adjusted
<table>
<thead>
<tr>
<th>Factor</th>
<th>Code</th>
<th>Pretest</th>
<th>Posttest</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Weighted Observed Mean</td>
<td>Standard Deviation</td>
<td>Number of Students</td>
<td>Weighted Observed Mean</td>
</tr>
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<td>. .</td>
<td>346.06</td>
</tr>
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<td></td>
<td>2 Cnt</td>
<td>334.96</td>
<td>30.58</td>
<td>. .</td>
<td>327.69</td>
</tr>
<tr>
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<td>342.33</td>
<td>24.27</td>
<td>12</td>
<td>348.17</td>
</tr>
<tr>
<td>Section 2</td>
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<td>346.93</td>
<td>34.24</td>
<td>15</td>
<td>351.47</td>
</tr>
<tr>
<td>Section 3</td>
<td>3</td>
<td>335.20</td>
<td>23.78</td>
<td>10</td>
<td>335.40</td>
</tr>
<tr>
<td>Section 4</td>
<td>4</td>
<td>335.14</td>
<td>41.91</td>
<td>7</td>
<td>323.43</td>
</tr>
<tr>
<td>Section 5</td>
<td>5</td>
<td>331.11</td>
<td>34.94</td>
<td>9</td>
<td>326.33</td>
</tr>
<tr>
<td>Section 6</td>
<td>6</td>
<td>338.30</td>
<td>18.73</td>
<td>10</td>
<td>331.90</td>
</tr>
<tr>
<td>Entire Sample</td>
<td>. .</td>
<td>339.25</td>
<td>29.17</td>
<td>63</td>
<td>338.48</td>
</tr>
</tbody>
</table>
means were adjusted by the covariate (pretest) scores on the TSCS-A.

The total observed means for the entire sample for the pretest and posttest indicated that, over all, the six sections lost less than one point off the total P score after the semester. Initially, the experimental group mean was higher (342.27) than the control group mean (334.96), and the experimental group mean increased after treatment. On the other hand, the control group mean scores were lower than the experimental group, and each control group's mean score was lower by the end of the semester as measured on the posttest TSCS-B. After the group means were adjusted for original differences as shown by the adjusted means in Table II, the experimental group's mean scores were higher than the control group's mean scores on the Tennessee Self-Concept Scale.

Table III provides the results from the analysis of covariance tests for significance using unique sums of squares on the posttest scores from the TSCS-B. The unique sums of squares approach was necessary in order to prevent a partitioning of the sums of squares in a hierarchical fashion (8, p. 481).

For unbalanced designs, however, the sums of squares for any one ordering of effects might not be sufficient. Further, the hypothesis corresponding to those sums of squares for any but the last term in the ordering can be difficult to interpret since, in
parametric terms, they represent combinations of means weighted by the observed cell frequencies. An alternative set of sums of squares which can be of greater interest results from ordering each term last in the design—thereby correcting each term for every other term in the model. Such sums of squares correspond to unweighted combinations of means. . . . This approach to decomposing the sums of squares is often termed the regression approach because, as in regression, each effect is assessed with respect to every effect in the model (8, p. 481).

**TABLE III**

**ANALYSIS OF COVARIANCE TESTS OF SIGNIFICANCE FOR TSCS-B USING UNIQUE SUMS OF SQUARES**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups (main effects)</td>
<td>72.16</td>
<td>1</td>
<td>72.16</td>
<td>.65</td>
<td>.48</td>
</tr>
<tr>
<td>Sections (nested factor)</td>
<td>531.74</td>
<td>4</td>
<td>132.94</td>
<td>.16</td>
<td>.96</td>
</tr>
<tr>
<td>Within groups</td>
<td>47058.58</td>
<td>56</td>
<td>840.33</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

"The statistical technique of analysis of covariance is used to control for initial differences between groups. The effect of analysis of covariance is to make the two groups equal with respect to one or more control variables" (1, p. 462). Analysis of covariance was essential in this study because the researcher was unable to randomly select two groups of students who were matched with respect to all
relevant variables; therefore, analysis of covariance provided a post-hoc method of partialing out the variance between the groups. Consequently, the final means of both the groups and the sections at the end of the semester on the TSCS-B were adjusted to account for the original differences between the groups and among the sections as noted in Table II and indicated by the lower beginning mean scores of the control group on the TSCS-A.

The results, as listed in Table III, show that given the fact that the means for the two groups were different on the pretest (TSCS-A), the adjusted group and section means were not significantly different on the posttest at the .05 level of significance. The .96 level of significance between sections, as indicated by the nested factor, shows that the individual sections were quite closely matched.

Based on the data presented in Tables II and III, hypothesis I was rejected. The adjusted posttest mean of the experimental group was not significantly higher than the adjusted posttest mean of the control group when controlling for the pretest in measuring self-concept levels of the two groups on the TSCS.

Hypothesis II: The Effect of the Buddy System on Congruence

Congruence, for this study, has been defined as "correspondence between the way one sees herself and the way she
would like to be" (3, p. 188). Congruence was expressed by a lack of distance (smaller numerical results of either a positive or negative value on the Personality Educational Environment Scale) between the individual's perception of himself, and the individuals within the educational setting (3). The Personality Educational Environment Scale (see Appendix A) was used to measure any change in the students' congruence levels for which the buddy system may have been responsible. The PEES consists of four concepts which measure the student "as-he-would-like-to-be" against the instructor, the other students, and the student "as-he-is" at the present time. The fourth concept, which measures the student "as-he-would-like-to-be," was subtracted from each of the first three concepts. A total concept-pair discrepancy score was arrived at by summing all of the individual scores and dividing by forty-five. This total concept-pair discrepancy score was used as the raw data figure. Table IV gives the cell means, standard deviations, and adjusted means for the pretest (PEES-A) and the post-test (PEES-B). The total observed means for both groups of the sample for the pretest and posttest indicate that over all, the six sections lost .17 over the semester on the PEES. The control group sections' mean scores ranged from 2.00 to 2.99 which indicated less congruence, while the experimental group sections' mean scores ranged from
TABLE IV

CELL MEANS, STANDARD DEVIATIONS, AND ADJUSTED MEANS FOR THE PERSONALITY EDUCATIONAL ENVIRONMENT SCALE FOR THE PRETEST AND POSTTEST

<table>
<thead>
<tr>
<th>Factor</th>
<th>Code</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Weighted Observed Mean</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>Group</td>
<td>1 Exp.</td>
<td>1.68</td>
<td>.80</td>
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<tr>
<td>Section 1</td>
<td>1</td>
<td>1.84</td>
<td>.86</td>
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<td>3</td>
<td>1.91</td>
<td>.85</td>
</tr>
<tr>
<td>Group</td>
<td>2 Cnt.</td>
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<td>.61</td>
</tr>
<tr>
<td>Section 4</td>
<td>4</td>
<td>2.32</td>
<td>.60</td>
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<td>Section 5</td>
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<td>Section 6</td>
<td>6</td>
<td>2.02</td>
<td>.54</td>
</tr>
<tr>
<td>Entire Sample</td>
<td>.</td>
<td>1.90</td>
<td>.72</td>
</tr>
</tbody>
</table>
1.00 to 1.99. After the treatment, each of the experimental sections had higher adjusted means, except for the evening section (3), and all of the control sections had lower adjusted means as measured by the PEES. That was exactly the opposite effect as was proposed by hypothesis II. The adjusted section means showed that in every section the control group had lower adjusted means, and the experimental group means became higher, except for the evening experimental group which also had slightly lower adjusted mean scores. On the posttest, the evening sections of both groups, which contained a higher percentage of over-twenty-five-year-old students, recorded the lowest adjusted section mean scores.

Table V provides the results from the analysis of covariance tests for significance using unique sums of squares on the posttest scores from the PEES-B. The results show that given the fact that the means for the groups and sections were different on the pretest PEES-A, the adjusted means were not significantly different on the posttest. The .75 level of significance between groups and the .30 level of significance among sections indicates no real differences between either the groups or the nested sections.

Based on the data presented in Tables IV and V, hypothesis II was rejected. The adjusted posttest mean of the experimental group was not significantly higher than
the adjusted posttest mean of the control group when controlling for the pretest in measuring congruence levels of the two groups on the PEES.

TABLE V
ANALYSIS OF COVARIANCE TESTS OF SIGNIFICANCE FOR PEES-B USING UNIQUE SUMS OF SQUARES

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance of F</th>
</tr>
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<tr>
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<td>1</td>
<td>.07</td>
<td>.12</td>
<td>.75</td>
</tr>
<tr>
<td>Sections (nested factor)</td>
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<td>4</td>
<td>.45</td>
<td>1.26</td>
<td>.30</td>
</tr>
<tr>
<td>Within groups</td>
<td>19.97</td>
<td></td>
<td>.36</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis IV: The Effect of the Buddy System on Achievement

A written paragraph sample was used to measure the effect of the buddy system on the achievement levels of students within the experimental group. The paragraphs were graded on a scale of one to four, with four being the highest score (see Appendix B). To ensure that all of the pretest paragraph samples (PS-A) were graded by the same standards as the posttest paragraph samples (PS-B), all of the paragraphs were graded at the same
<table>
<thead>
<tr>
<th>Factor</th>
<th>Code</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
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<td>Deviation</td>
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<tr>
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<td>.94</td>
</tr>
<tr>
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<td>.78</td>
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<td>2.50</td>
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<tr>
<td>Group</td>
<td>2 Cnt.</td>
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<td>.93</td>
</tr>
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<td>Section 4</td>
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<td>2.86</td>
<td>1.21</td>
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<td>.78</td>
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<tr>
<td>Section 6</td>
<td>6</td>
<td>2.90</td>
<td>.88</td>
</tr>
<tr>
<td>Entire Sample</td>
<td>. .</td>
<td>2.65</td>
<td>.94</td>
</tr>
</tbody>
</table>
time, after the close of the semester. Table VI gives the cell means, standard deviations, and adjusted group and section means for the paragraph samples. The total means for both groups indicate that the composite mean score was raised by .69 points over the semester. In every control group section the mean scores were higher than the mean scores of the experimental group sections; however, by the end of the semester, the means of the experimental group sections had increased by more percentage points. The morning experimental section means were raised by .75 points as opposed to the morning control sections' increase of .43 points. The afternoon experimental section was .80 as opposed to .67 for the afternoon control, and the evening experimental was .80 as opposed to .60 for the evening control section. For the pretest, the observed means of the experimental group were .040 of a point below that of the control group; however, for the posttest the adjusted means of the experimental group were only .006 of a point below that of the means for the control group.

The results from the analysis of covariance tests for significance using unique sums of squares are given in Table VII.

The .31 level of significance between groups and the .87 level of significance among sections indicate no real
difference between either the groups or the nested sections. Thus, based on the data presented in Tables VI and VII, hypothesis IV was rejected. The adjusted posttest mean of the experimental group was not significantly higher than the adjusted posttest mean of the control group when controlling for the pretest in measuring achievement levels of the two groups on the written paragraph samples.

Hypothesis III: The Effect of the Buddy System on Retention

Attrition rates were measured by establishing the dropout percentages for each of the groups. This was accomplished by tabulating the total number of students present in both groups during the second week of class. Next, the number of
these students who dropped out of each group by the sixteenth week was calculated. Then, the attrition percentage was arrived at by dividing the total number of students present during the second week of class into the dropout figure. The experimental group began the semester with 59 students and finished with 37 students, an attrition percentage of .373. The control group began the semester with 60 students and finished with 26 students, an attrition percentage of .567. A test for significance of the difference between proportions for independent groups was calculated.

The calculated z was 2.16; thus, the effect of the buddy system on the experimental group was significant at the .05 level. Z was greater than the critical value of 1.96, and the null hypothesis of no difference was rejected. The probability that the attrition proportion for the two groups was the same was less than .05 (2). As a result, hypothesis III was accepted. The attrition percentage at the end of the semester for the students in the experimental group was significantly lower than the attrition percentage for the students in the control group.

Interaction Time Summary

The researcher had no control over the extent of "natural" buddying of students which occurred within the
control group of students. Therefore the students of both groups were surveyed (see Appendix E) to determine the extent of uncontrolled buddying which took place outside of class time. Table VIII provides a summary of that information.

In general, although three-fourths of the control group of students did associate with other students outside of class time, the rate of association was less and the extent of time spent together was shorter than that for the experimental students. Students in both groups talked with each other either before or after class, but some of the experimental students also called each other on the phone or went to the school cafeteria together. Of the control students, 62 percent said that they did not associate with other students outside of class time, even though three-fourths of them had; apparently they did not feel like the time spent together before or after class was important enough to be rated as an association. On the other hand, only 22 percent of the experimental students responded negatively to the question of out-of-class associations. The following is a representative sample of comments from the experimental students.

For the two semesters that I have been in college, I have been so shy that I kept quiet in the classroom. I have never had any friends in college. This semester in the developmental writing class, I came to have a partner by chance—by drawing numbers. I am very glad I came to know, Jana, my partner.
<table>
<thead>
<tr>
<th>Have you ever...</th>
<th>Control</th>
<th>Experimental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associated with other students outside of classroom?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>38%</td>
<td>78%</td>
</tr>
<tr>
<td>No</td>
<td>62%</td>
<td>22%</td>
</tr>
<tr>
<td>Met another student before class?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5 minutes</td>
<td>42%</td>
<td>21%</td>
</tr>
<tr>
<td>6-10 minutes</td>
<td>34%</td>
<td>30%</td>
</tr>
<tr>
<td>11-20 minutes</td>
<td>.</td>
<td>11%</td>
</tr>
<tr>
<td>21+ minutes</td>
<td>.</td>
<td>19%</td>
</tr>
<tr>
<td>Total</td>
<td>76%</td>
<td>81%</td>
</tr>
<tr>
<td>Walked out of class with another student?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5 minutes</td>
<td>46%</td>
<td>35%</td>
</tr>
<tr>
<td>6-10 minutes</td>
<td>35%</td>
<td>35%</td>
</tr>
<tr>
<td>11-20 minutes</td>
<td>.</td>
<td>1%</td>
</tr>
<tr>
<td>21+ minutes</td>
<td>.</td>
<td>14%</td>
</tr>
<tr>
<td>Total</td>
<td>81%</td>
<td>85%</td>
</tr>
<tr>
<td>Talked on the phone with another student?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5 minutes</td>
<td>.</td>
<td>2%</td>
</tr>
<tr>
<td>6-10 minutes</td>
<td>.</td>
<td>2%</td>
</tr>
<tr>
<td>11-20 minutes</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>21+ minutes</td>
<td>.</td>
<td>1%</td>
</tr>
<tr>
<td>Total</td>
<td>.</td>
<td>5%</td>
</tr>
<tr>
<td>Gone to the cafeteria with another student?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5 minutes</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>6-10 minutes</td>
<td>.</td>
<td>2%</td>
</tr>
<tr>
<td>11-20 minutes</td>
<td>.</td>
<td>2%</td>
</tr>
<tr>
<td>21+ minutes</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>Total</td>
<td>.</td>
<td>4%</td>
</tr>
<tr>
<td>Been helped to understand the course better because of other students?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>30%</td>
<td>57%</td>
</tr>
<tr>
<td>No</td>
<td>70%</td>
<td>43%</td>
</tr>
</tbody>
</table>
For some reason I really enjoyed looking forward to this class.

A group of us went out together to a restaurant. We invited everyone, but not everyone came. We talked about personal goals, problems, and future classes.

My partner and I went to his house one day and played pool together. We also studied together, and he helped me to remember things I overlooked in my own writing.

Summary

In this chapter, the analysis of the data was presented in the order of the research hypotheses. Cell means, standard deviations, adjusted means, and the analysis of covariance tests of significance using unique sums of squares were provided for the results from the Tennessee Self-Concept Scale measure of self-concept, the Personality and Educational Environment Scale measure of classroom congruence, and the paragraph sample measure of achievement in English. Based on the data presented, the self-concept, congruence, and achievement levels of the students in the buddy system, experimental group were not significantly affected by the treatment.

The hypothesis dealing with retention was accepted. Students who participated in the buddy system were retained at a significantly higher proportion, \( p < .05 \).

Finally, a review of out-of-class interaction time on the part of students in both the control and the experimental groups was analyzed. For the most part, students in the
control group associated with one another less often and for shorter periods of time outside of the classroom.


CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

This study was undertaken to determine the effect of a system whereby students were not only allowed to actively participate in class activities, but they were encouraged to interact with one another as a part of their required class activities. This system was called the buddy system. Through the buddy system, students got to know each other sooner and an avenue was provided which helped them to exchange ideas, discuss frustrations, and work together. The study was concerned with determining the effects of the buddy system on students' self-concept, congruence, achievement, and attrition levels.

The purpose of the study was to examine the following relationships:

1. The effect of a buddy system on the self-concept levels of students as measured by the pretest and posttest scores on the Tennessee Self-Concept Scale (TSCS),

2. The effect of a buddy system on congruence levels (educational-setting comfort levels) of students as measured by pretests and posttests on the Personality Educational Environment Scale (PEES),
3. The effect of a buddy system on attrition levels as measured by the percentage of students who dropped the class between the second week of class and the sixteenth week of class, and

4. The effect of a buddy system on achievement levels of students in English as measured by pretest and posttest scores on a written paragraph sample.

Available literature which reviewed the history and purpose of developmental students, the characteristics of these students, attrition and retention research, self-concept as it relates to achievement, and congruence theory studies was surveyed. Next, a review was made of effective educational procedures which have been used with developmental studies students, and, finally, other systems were looked at which matched students together in various numbers for a variety of educational purposes.

The study was conducted at Brookhaven Community College of the Dallas Community College District. The treatment (buddy system) was a procedure by which two students were randomly paired together in order to share ideas, to work on assignments, to get to know each other better, and to support one another. In class, the students in the experimental group spent approximately 15 percent of their total class time in interaction activities, which were educationally oriented, with their buddies. Three instruments were used to measure change. First, the Tennessee Self-Concept Scale (Form C)
was used to measure self-concept level changes. The scale consists of 100 self-descriptive statements which the subjects used to portray their own pictures of themselves (8, 12). Next, the Personality and Educational Environment Scale was used to measure educational-setting congruence level changes. This is a modified semantic differential scale which rates the student as-he-would-like-to-be against the other students, the instructor, and the student as-he-is on fifteen specific scales (2, 3). Finally, a written paragraph sample was used to measure English achievement level changes. The paragraphs were graded by college faculty members on a scale of one to four, with four being the highest score. The statistical methods used were the analysis of covariance tests of significance (11, 13) for results on the Tennessee Self-Concept Scale, Personality and Educational Environment Scale, and paragraph sample. A test for significance of difference between proportions for independent groups (7) was used to measure attrition levels.

Summary of Major Findings

A summary of the data findings is as follows. First, the results from the Tennessee Self-Concept Scale indicated that each experimental section’s mean self-concept score increased over the semester; this was not true for the control group sections. However, the analysis of covariance tests of significance using unique sums of squares showed
that the treatment had not significantly affected the experimental group more than the control group was affected. The level of significance between groups was .48, and the level of significance among sections was .96. The sample means moved in the direction predicted by the hypothesis.

Second, the observed mean results from the **Personality Educational Environment Scale** showed a negative result in the treatment group as a result of the buddy system procedure. At the end of the semester, the control group had more congruent scores while the experimental group showed less congruent results. This was not the effect that had been proposed at the beginning of the study. Even the adjusted posttest means showed that the experimental group was less comfortable in the classroom than the control group of students, except for the older night students. In both evening sections, the observed and adjusted mean scores were lower, indicating more congruency. Over all, the .75 level of significance between groups and the .30 level of significance among sections showed that the experimental group's posttest means were not significantly higher than the control group's posttest means.

Next, the written paragraph sample results of .31 between groups and .87 among sections indicated that the treatment had not significantly affected the experimental
group more than the control group was affected. Both groups had improved their mean achievement scores in English over the semester. However, the treatment group started the semester with lower mean scores and increased the final mean scores by more points than the control group did.

Finally, the attrition rates were established by determining the proportion of students, for each of the groups, who were present during the second week of class that were not enrolled during the sixteenth week of class. The experimental group finished the semester with an attrition proportion of .373, as 37 out of 59 students completed the sixteen-week course. The control group had an attrition proportion of .567, with 26 out of 60 students finishing the class. A test of significance of the difference between proportions produced significant results at the .05 level of significance; thus the treatment was an effective method for keeping the students coming to class.

However, the researcher does not know exactly what aspects of the buddy system kept the students coming to class in significantly larger numbers. This is an important concern. Darkenwald and Merriam write, "Participation is central to theory and practice in adult education because the great majority of learners are voluntary learners" (5, p. 117). The results from the self-concept, classroom congruence, and achievement measures did not help to answer
this question. Perhaps, it was just the participation aspect of the buddy system which students enjoyed. Doughan says, "Participation can often be viewed as an end in itself" (6, p. 88). Other researchers have also found that any level of participation increases the chances of student retention (1, 4, 9). Michaelson (1) found that his team-learning tactics resulted in exceptionally high levels of attendance. Other benefits from the buddy system went beyond the classroom, as supported by the written remarks of students who participated in the buddy system. Friendships were fostered which provided social support, information was supplied about coping with school, and a sense of community was developed.

Conclusions

Consideration of the data findings of this study permitted the formulation of the following conclusions.

1. For this sample, the buddy system treatment and the self-concept levels of the students in the treatment group were not related at a significant level as measured by the Tennessee Self-Concept Scale.

2. For this sample, the buddy system treatment and the congruence levels (classroom-comfort) of students in the treatment were not related as measured by the Personality Educational Environment Scale.
3. For this sample, the buddy system treatment and the academic achievement levels of the students in the treatment group were not significantly related as measured on the written paragraph sample.

4. For this sample, the buddy system treatment and the retention levels of students in the treatment group were significantly related at the .05 level.

Implication

The following statement is an implication that may be drawn from the findings of this study.

Teachers of adult education students may wish to consider the use of a system similar to the buddy system in order to encourage retention, based on the fact that the buddy system treatment affected retention at the .05 level of significance.

Recommendations for Future Research

On the basis of the findings and conclusions of this study, the following recommendations for future research are made.

1. Larger groups of students need to be involved in each of the nested sections in order to determine the effects of the treatment.

2. The posttests for each of the measures used need to be given to the students a second or even a third time
after a longer period of time has passed. If followed over a two-semester or three-semester period of time, more significant results and longer lasting effects may or may not be realized.

3. Students who drop out of the control and treatment groups need to be included in the posttest assessment with each of the measures to determine if any changes have occurred in their self-concept, congruence, or academic achievement levels.

4. The Personality Educational Environment Scale requires further research to determine which scores and which concepts or scales on the instrument may or may not effectively measure changes in congruence levels as affected by the buddy system procedure.

5. Further research needs to be conducted on the buddy system treatment, itself, to determine exactly what aspects of the procedure are most effective with students. For example, were some phases of the treatment good while others were not? Were some activities enjoyed more by the students than others? Were there other activities which the students wished had been included but were not?

7. This study should be replicated using the buddy system at other community colleges and in other courses in an effort to validate and strengthen the findings of this study.
CHAPTER BIBLIOGRAPHY


APPENDICES
Appendix A

Personality and Educational Environment Scale

The purpose of this questionnaire is to measure the meanings of certain things. On the next page you see a concept followed by a series of scales. You are to decide which adjective in the scale most fits the concept you are rating and then how strongly you would apply this adjective to the concept. Indicate your rating by circling one number along the scale. The closer a number is to either end of the scale, the more strongly you feel that the adjective at that end is the one that most describes the meaning of that concept for you.

Examples:

If you feel that the concept is very closely related to one end of the scale, you should circle the number as follows.

fair 1 2 3 4 5 6 7 8 9 10 11 unfair

If you feel that the concept is quite closely related to one end of the scale (but not extremely) you should circle 2 or 3, 9 or 10.

If the concept is only slightly related to one side as opposed to the other side (but is not really neutral), then you should circle one of the center numbers, 4 or 5, 7 or 8. The number you circle depends upon which end of the scale seems most characteristic of the concept you are judging.

If you consider the concept to be neutral on the scale, with both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, then you should circle the center number, 6.

Remember

1. You can circle any number through 1 to 11.
2. Be sure to circle a number for each scale for each concept--do not omit any.
3. Only circle one number on a single scale.

Work at a fairly high speed. Do not worry or puzzle over individual items. It is your first impressions, the immediate "feelings" about the items, that we want.
Other Developmental Writing Students

The first concept we are asking you to rate is other adult education students. By students, we mean the people you meet when you go to the DW 090 class. We are interested in how you view the other students. Make sure you keep this concept in mind while making the ratings.

<table>
<thead>
<tr>
<th>Concept</th>
<th>Rating 1</th>
<th>Rating 2</th>
<th>Rating 3</th>
<th>Rating 4</th>
<th>Rating 5</th>
<th>Rating 6</th>
<th>Rating 7</th>
<th>Rating 8</th>
<th>Rating 9</th>
<th>Rating 10</th>
<th>Rating 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>stimulating</td>
<td>1 2 3 4 5 6 7 8 - 10 11</td>
<td>boring</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>sympathetic</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
<td>unsympathetic</td>
<td></td>
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<tr>
<td>strong</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
<td>weak</td>
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<tr>
<td>conventional</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
<td>eccentric</td>
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<tr>
<td>rational</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
<td>irrational</td>
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<td>friendly</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
<td>unfriendly</td>
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<td>active</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
<td>passive</td>
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<td>optimistic</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
<td>pessimistic</td>
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<tr>
<td>scholarly</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
<td>non-scholarly</td>
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<td>warm</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
<td>cold</td>
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<tr>
<td>organized</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
<td>disorganized</td>
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<td>lively</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
<td>dull</td>
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<td>conservative</td>
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<td>liberal</td>
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<tr>
<td>sociable</td>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
<td>unsociable</td>
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<td>conformist</td>
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<td>non-conformist</td>
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</tbody>
</table>
My Developmental Writing Instructor

The second concept we are asking you to rate is your developmental writing instructor. Make sure you keep this concept in mind while making the ratings.

stimulating 1 2 3 4 5 6 7 8 9 10 11  boring
sympathetic 1 2 3 4 5 6 7 8 9 10 11  unsympathetic
strong 1 2 3 4 5 6 7 8 9 10 11  weak
conventional 1 2 3 4 5 6 7 8 9 10 11  eccentric
rational 1 2 3 4 5 6 7 8 9 10 11  irrational
friendly 1 2 3 4 5 6 7 8 9 10 11  unfriendly
active 1 2 3 4 5 6 7 8 9 10 11  passive
optimistic 1 2 3 4 5 6 7 8 9 10 11  pessimistic
scholarly 1 2 3 4 5 6 7 8 9 10 11  non-scholarly
warm 1 2 3 4 5 6 7 8 9 10 11  cold
organized 1 2 3 4 5 6 7 8 9 10 11  disorganized
lively 1 2 3 4 5 6 7 8 10 11  dull
conservative 1 2 3 4 5 6 7 8 9 10 11  liberal
sociable 1 2 3 4 5 6 7 8 9 10 11  unsociable
conformist 1 2 3 4 5 6 7 8 9 10 11  non-conformist
Myself

The next concept we are asking you to rate is yourself as you see yourself in this class at the present time. Make sure you keep this concept in mind while making the ratings.

stimulating 1 2 3 4 5 6 7 8 9 10 11 boring
sympathetic 1 2 3 4 5 6 7 8 9 10 11 unsympathetic
strong 1 2 3 4 5 6 7 8 9 10 11 weak
conventional 1 2 3 4 5 6 7 8 9 10 11 eccentric
rational 1 2 3 4 5 6 7 8 9 10 11 irrational
friendly 1 2 3 4 5 6 7 8 9 10 11 unfriendly
active 1 2 3 4 5 6 7 8 9 10 11 passive
optimistic 1 2 3 4 5 6 7 8 9 10 11 pessimistic
scholarly 1 2 3 4 5 6 7 8 9 10 11 non-scholarly
warm 1 2 3 4 5 6 7 8 9 10 11 cold
organized 1 2 3 4 5 6 7 8 9 10 11 disorganized
lively 1 2 3 4 5 6 7 8 9 10 11 dull
conservative 1 2 3 4 5 6 7 8 9 10 11 liberal
sociable 1 2 3 4 5 6 7 8 9 10 11 unsociable
conformist 1 2 3 4 5 6 7 8 9 10 11 non-conformist
**Myself-As-I-Would-Like-To-Be**

The last concept we are asking you to rate is myself-as-I-would-like-to-be. By this we mean, the way that you would like to see yourself functioning in this class. Make sure you keep this concept in mind while making the ratings.

<table>
<thead>
<tr>
<th>Stimulating</th>
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<th>11</th>
<th>Boring</th>
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<td>Unsympathetic</td>
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<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>Cold</td>
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<tr>
<td>Organized</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
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<td>Disorganized</td>
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<tr>
<td>Lively</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>Dull</td>
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<td>Conservative</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
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<td>2</td>
<td>3</td>
<td>4</td>
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<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
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<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>Non-conformist</td>
</tr>
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</table>
Appendix B

Grading Standards for Paragraph Measurement

The paragraphs will be assigned a grade of 1 through 4 based on the following criteria. Each grade is a combination of content, mechanics, and style.

4. Standards for a 4 paragraph:
   
   Content—A worthwhile topic is presented which is somewhat defined and well supported.
   
   Mechanics—There is no more than one major sentence error, two misspelled words, and a limited number of deviations from standard English usage.
   
   Style—Most of the sentences are well-constructed and varied, showing a degree of maturity and fluency.

3. Standards for a 3 paragraph:
   
   Content—The controlling idea is apparent; however, the supports may be inadequate.
   
   Mechanics—There are no more than two major sentence errors, five misspelled words, and limited deviations from standard English usage.
   
   Style—The paragraph demonstrates some variety of sentences but lacks distinction.

2. Standards for a 2 paragraph:
   
   Content—The central idea is confused; also, the supporting sentences are irrelevant or repetitious.
   
   Mechanics—The paragraph has several major sentence errors, spelling errors, diction problems, and deviations from standard English usage.
   
   Style—The sentences are short, diction problems exist, and there is a lack of unity or transitions between thoughts.

1. Standards for a 1 paragraph:
   
   Content—The central idea is lacking, with nonconcrete and irrelevant details included.
Mechanics--The paragraph reflects only minimal or no understanding of the mechanics of standard English usage.

Style--The paragraph is sloppy, illegible, and obviously written hastily, without much effort.
Appendix C

Biographical Data Inventory

I. General Information:

1. Student I.D. Number

2. Sex
   Male ___ Female ___

3. Age

II. Work Experience:

4. At the present time are you not working at all? Yes ___ No ___

5. Are you working between one and twenty hours per week? Yes ___ No ___

6. Are you working more than twenty hours per week? Yes ___ No ___

III. Residence-Family:

7. Do you live with your parents? Yes ___ No ___

8. Do you live alone or with a roommate? Yes ___ No ___

9. Do you live with your spouse and/or children? Yes ___ No ___

10. Are you currently married? Yes ___ No ___

11. Do you have children? Yes ___ No ___

IV. Educational Experience:

12. What year did you graduate from high school? (Leave blank if you did not graduate.)

13. Is this your first semester to take college classes? Yes ___ No ___

V. Nationality:

14. Are you a United States citizen? Yes ___ No ___
15. If you were born in another country, how many years have you lived in the United States?
Appendix D

Biographical Data Information

<table>
<thead>
<tr>
<th>Basic Information</th>
<th>Control</th>
<th>Experimental</th>
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<tbody>
<tr>
<td>Males</td>
<td>32</td>
<td>45</td>
</tr>
<tr>
<td>Females</td>
<td>28</td>
<td>14</td>
</tr>
<tr>
<td>Ages--0-20</td>
<td>22</td>
<td>24</td>
</tr>
<tr>
<td>20-25</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td>26-30</td>
<td>14</td>
<td>7</td>
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<tr>
<td>31-40</td>
<td>4</td>
<td>3</td>
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<td>41-50</td>
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<td>50+</td>
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<td>Do not work</td>
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<tr>
<td>1-20 hours per week</td>
<td>11</td>
<td>5</td>
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<td>21+ hours per week</td>
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<td>43</td>
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<td>Residence--Parent's home</td>
<td>24</td>
<td>30</td>
</tr>
<tr>
<td>Roommate or alone</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>Spouse</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Have children</td>
<td>12</td>
<td>8</td>
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<table>
<thead>
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<th>Education</th>
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<td>No high school degree</td>
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<td>6</td>
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<td>Year of graduation--</td>
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<tr>
<td>Before 1970</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>1971-1975</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>1976-1980</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>1981-1985</td>
<td>23</td>
<td>31</td>
</tr>
<tr>
<td>First semester of college</td>
<td>22</td>
<td>22</td>
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<table>
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<th>Nationality</th>
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<tr>
<td>U.S.</td>
<td>50</td>
<td>48</td>
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<tr>
<td>Other</td>
<td>10</td>
<td>11</td>
</tr>
</tbody>
</table>

| Other countries represented-- |         |              |
| Viet Nam             | 2       | 5            |
| Cambodia             | 1       | 0            |
| Korea                | 2       | 2            |
| Nigeria              | 2       | 0            |
| Japan                | 1       | 0            |
| Netherlands          | 1       | 0            |
| Ethiopia             | 1       | 0            |
| Poland               | 0       | 1            |
| Mexico               | 0       | 1            |
| Belgium              | 0       | 1            |
| Syria                | 0       | 1            |
Appendix E

Student Interaction Time

Directions: Circle the correct answer to each question.

1. Outside the classroom, do you ever associate with any of the other students in DW 090? 1. Yes No

2. Have you ever met with one of the other students before class started and talked with that student? 2. Yes No
   If yes, for how long did you talk?
   1-5 minutes 6-10 minutes 11-20 minutes 21+ minutes

3. Have you ever walked out of the class with another student? 3. Yes No
   If yes, for how long did you talk?
   1-5 minutes 6-10 minutes 11-20 minutes 21+ minutes

4. Have you ever called one of the other students from this class on the phone? 4. Yes No
   If yes, for how long did you talk?
   1-5 minutes 6-10 minutes 11-20 minutes 21+ minutes

5. Have you ever gone over to the cafeteria with another student from this class to talk or to work on class materials? 5. Yes No
   If yes, for how long did you talk?
   1-5 minutes 6-10 minutes 11-20 minutes 21+ minutes

6. Do you feel that the other students or a student in this class has helped you to be more successful in your study of English? 6. Yes No
   If yes, please describe how on the blank below.
7. Have you in any other way, other than those ways listed in the questions above, associated with a student or students from this class?  . . . . . . . . . . . . . 7. Yes No

If yes, please describe how on the blank below.
Appendix F

Vocabulary for the PEES

Directions: In the following exercise, you will be asked to rank yourself and other people in several areas. The following definitions will help to explain some of the words used; however, some of the words have no definition given as one is not needed. You may want to check back and use these definitions as you fill out the exercise.

1. stimulating .................... boring
   (exciting) (uninteresting)

2. sympathetic ................. unsympathetic
   (understanding) (not understanding)

3. strong .................... weak (lacking
   (having personal power) personal power)

4. conventional .............. eccentric (unusual,
   (ordinary, regular) quite different)

5. rational ....................... irrational (not
   (uses reason, reasonable) using reason,
   unreasonable)

6. friendly ...................... unfriendly

7. active ......................... passive (one who is
   (one who participates nonactive, accepting,
   and is involved) and without resis-
   tance)

8. optimistic ...................... pessimistic (one who
   (one who usually nonactive, accepting,
   expects the best) and without resis-
   tance)

9. scholarly ...................... non-scholarly (an
   (an educated person) uneducated person)

10. warm ......................... cold (a person who
    (a person who likes does not like other
    other people)

11. organized ..................... disorganized
    (having an order) (lacking order)

12. lively ......................... dull
<table>
<thead>
<tr>
<th></th>
<th>conservative</th>
<th>liberal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(one who is cautious, traditional, and wants to keep things as they are at present)</td>
<td>(one who favors reform and change)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>sociable</th>
<th>unsociable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(one who enjoys being with other people)</td>
<td>(one who does not enjoy being around other people)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>conformist</th>
<th>non-conformist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(one who likes to behave in the accepted or standard ways of society)</td>
<td>(one who does not like to behave in the accepted or standard ways of society)</td>
</tr>
</tbody>
</table>
Ms. Carol Conclair  
3605 South Echo Trail  
Piano, Texas 57023  
U.S.A.

Dear Carol:

Thank you for your letter of February 5. Your buddy system sounds like a great idea and I'd certainly like to see some empirical data attesting to its effectiveness. It is particularly appropriate with adults frightened by the prospect of returning to "school."

I have enclosed copies of pages from the PEES. Of course you realize that you can create your own concepts. The Semantic Differential is very flexible so please feel free to create your own concepts. I suppose that an advantage associated with using mine is the fact it has a proven factor structure.

You haven't said what you will be doing with this. Ideally, you will do a Campbell & Stanley pre-test post-test control group design. You will take your class, measure their congruence states early (2nd session!); they'll be little more than guesses or first impressions at this stage. It doesn't matter. Then you will randomly assign half to a buddy system; the controls will go on as usual. The biggest problem will be to prevent the two groups from contaminating one another. You could use sociometry to check the extent to which buddying has occurred in the experimental group and "contamination" (illegal buddies!) has occurred in the control group.

If you do some work in this area I'd really like to know about it. I get several letters per week requesting the EPS or PEES. Most promise to keep in touch but few do. Once they get their degree it's back to the coal face. Contacting me is a low priority.

The congruence thing is not well understood and even Patricia Cross's write-up didn't do much to clarify it. I have to something about this. So, stay in touch.

Will you be at the Adult Education Research Conference in Raleigh, North Carolina? (first week of April). I have no idea what it must be like living in a piano. Flat or tuneful I suppose.

Yours,

Roger Boshier, Professor of Adult Education.
Appendix H
Buddy Activities

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Experimental Group</th>
<th>Control Group</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1-21</td>
<td>Buddies selected, phone numbers exchanged (optionally), and introduce their buddy to the class.</td>
<td>Introduce themselves to the class.</td>
</tr>
<tr>
<td>2</td>
<td>1-28</td>
<td>Interview buddy and write a journal entry which introduces their buddy to the instructor.</td>
<td>Write a journal entry introducing themself to the instructor.</td>
</tr>
<tr>
<td>3</td>
<td>2-4</td>
<td>Subject-verb agreement worksheet given to each pair of buddies to discuss and choose correct answers.</td>
<td>One worksheet given to each student and work is done individually</td>
</tr>
<tr>
<td>4</td>
<td>2-11</td>
<td>Buddies discuss and submit five groups of three sentences to be used in sentence combining exercises.</td>
<td>Each individual student submits five groups of three sentences to be used in exercises.</td>
</tr>
<tr>
<td>5</td>
<td>2-18</td>
<td>Buddies discuss and submit a list of five possible journal entry topics.</td>
<td>Each individual submits a list of five possible journal entry topics.</td>
</tr>
<tr>
<td>6</td>
<td>2-25</td>
<td>Buddies discuss paragraph topics from textbook and do prejottings together.</td>
<td>Each student does the paragraph prejottings individually.</td>
</tr>
<tr>
<td>7</td>
<td>3-4</td>
<td>Buddies discuss and review Test 3 together. One set of test answers is given to each pair along with their corrected test from the week's class assignment.</td>
<td>Teacher reviews Test 3 orally with students, responds to questions, and leads class discussion.</td>
</tr>
<tr>
<td>8</td>
<td>3-11</td>
<td>Buddies discuss and submit five test questions for Test 4 on pronoun usage.</td>
<td>Each individual student submits five test questions for Test 4.</td>
</tr>
<tr>
<td>Week</td>
<td>Date</td>
<td>Experimental Group</td>
<td>Control Group</td>
</tr>
<tr>
<td>------</td>
<td>-------</td>
<td>------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>9</td>
<td>3-25</td>
<td>Buddies discuss and revise present tense paragraph into past tense paragraph.</td>
<td>Each individual student revises the paragraph by himself.</td>
</tr>
<tr>
<td>10</td>
<td>4-1</td>
<td>Buddies discuss and revise first person paragraph into third person paragraph.</td>
<td>Each individual student revises the paragraph by himself.</td>
</tr>
<tr>
<td>11</td>
<td>4-8</td>
<td>Buddies discuss and revise the dangling and misplaced modifiers exercises.</td>
<td>Each individual student revises the exercise by himself.</td>
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<tr>
<td>12</td>
<td>4-15</td>
<td>Buddies discuss, revise, and rewrite error filled paragraph together.</td>
<td>Each individual student revises the paragraph by himself.</td>
</tr>
<tr>
<td>13</td>
<td>4-22</td>
<td>Buddies discuss paragraph assignment topics from the textbook and do prejottings together.</td>
<td>Each student does the paragraph pre-jottings individually.</td>
</tr>
<tr>
<td>14</td>
<td>4-29</td>
<td>Buddies test each other on spelling &quot;Look-alikes/Sound-alikes.&quot;</td>
<td>Each student reviews spelling &quot;Look-alikes/Sound-alikes&quot; individually.</td>
</tr>
<tr>
<td>15</td>
<td>5-6</td>
<td>Buddies discuss and submit class evaluation and make suggestions for the next semester. (Cookies and donuts provided by the instructor.)</td>
<td>Each individual student evaluates the class and makes suggestions for the next semester. (Cookies and donuts provided by the instructor.)</td>
</tr>
</tbody>
</table>
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